

*Impact 3.8-40: Impacts to recreation on Oroville Reservoir.*

Oroville Reservoir would experience substantial long-term average elevation reductions for most months of the year over the 70-year period of record. Long-term average Oroville Reservoir end of month elevation under the cumulative conditions would be reduced up to 18 feet during the month of September. Given the importance of water-related recreation activities in Oroville Reservoir (i.e., boating, fishing, camping, sailing), and the relatively large reduction in water surface elevation that would be experienced under the cumulative condition relative to the existing condition, impacts on recreation for the Oroville Reservoir would represent a potentially significant impact.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives contribution to the cumulative condition would not be considerable.

*Impact 3.8-41: Impacts to recreation of Feather River.*

The Feather River would experience some substantial changes in flow for most months of the year for the 70-year period of record. Changes in long-term average monthly mean flow would range from decreases in flow of up to 14.1 percent (i.e., November) to increases in flow of up to 36.4 percent (i.e., August). Given the uncertainty associated with the potential effects that these flow reductions may have on recreation activities in the Feather River, impacts on recreation for the Feather River would represent a potentially significant impact.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in river flow would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives contribution to the cumulative condition would not be considerable.

### 3.8.2.5 Environmental Protection and Mitigation Measures

Several mitigation measures have been incorporated into the Mitigation Plan to reduce the significance of potential recreation impacts associated with implementation of the Proposed Project or Upstream Diversion Alternative. These measures are presented below.

*Maintain Public Recreation Trail Access During Construction*

<b>Commitment:</b>	Provide public recreation trail access to the Project area during construction, to the extent feasible, without compromising public health and safety and Project construction progress.
<b>Responsible Parties:</b>	Reclamation/Construction Contractor

<b>Location:</b>	Project area
<b>Timing:</b>	During all phases of construction (2002 through 2004); as feasible
<b>Monitoring:</b>	Monitor fencing and temporary markers or other posted signs used to indicate areas open for public trail use in Project vicinity during construction.
<b>Reporting Requirements:</b>	Record trail access restrictions in daily inspector report

**Description of Activities:**

Reclamation will require the Construction Contractor to identify, with temporary construction fencing, flagging, and posted signs, all areas of restricted or limited public access. Additionally, Reclamation will provide public notification of such limitations through a Public Outreach and Information Program.

**Success Criteria:** Appropriate, safe trail access is provided, to extent feasible.

***Avoid Recreation Trail Closures That Affect the Western States Endurance Run, Tevis Cup Western States Trail Ride, or the American River 50-Mile Endurance Run Events***

<b>Commitment:</b>	Project construction scheduling will avoid impacting the route or timing of the Western States Endurance Run, Tevis Cup Western States Trail Ride, and the American River 50-Mile Endurance Run annual events.
<b>Responsible Parties:</b>	Reclamation/Construction Contractor and CDPR Event Coordinator
<b>Location:</b>	Project area recreation trails
<b>Timing:</b>	Once annually per event (as needed)
<b>Monitoring:</b>	Indicate event in compliance report
<b>Reporting Requirements:</b>	No specific reporting requirements

**Description of Activities:**

As part of the event permitting process, CDPR will coordinate with event sponsors and Reclamation's Construction Contractor to ensure safe passage along event routes during set-up, operation and breakdown activities through the suspension and elimination of all potentially hazardous construction associated risks during these events.

**Success Criteria:** Planned annual events and routes are maintained.

***Auburn-to-Cool Trail***

The Auburn-to-Cool Trail crossing of the dewatered channel North Fork American River will be lost once the bypass tunnel is closed and river flows returned to the natural river channel.

**PCWA Commitment:**

In order to mitigate PCWA's share of the recreational impact associated with bifurcation of the Auburn-to-Cool Trail, PCWA shall pay a maximum of \$500,000 to be used for costs associated with the construction of a new bridge across the North Fork American River or another alternate mitigation program (e.g., the construction of new trail segments). Such money, or some lesser amount if the full amount is not required, shall be made available to CDPR only after all of the following have occurred: (1) CDPR and Reclamation have completed the environmental review necessary to implement such a Project, have chosen to proceed with such a Project, and have obtained all regulatory approvals necessary to proceed with the Project; (2) any litigation over such environmental review or regulatory approvals has been resolved in favor of CDPR and/or Reclamation or other approving agency; and (3) the American River Pump Station Project has obtained all necessary regulatory and/or discretionary approvals necessary for construction, and any litigation over any such approvals has been resolved in favor of PCWA.

PCWA will have met its obligations under this mitigation measure once it has provided payment for costs associated with construction of a bridge or alternate trail.

**California Resources**

**Agency Commitment:** The State of California has indicated that \$1.0 million would be available to apply toward the design, planning and construction of crossing or alternate trail access near the Project site.

**Responsible Parties:** California Resources Agency, CDPR/PCWA

**Location:** To be determined by future study

**Timing:** Ongoing

**Description of Activities:**

Various trail replacement alternatives are being considered by state and federal agencies to determine the best approach to provide trail access for multiple user groups. Feasibility studies will be performed.

**Success Criteria:**

Lead agencies and CDPR participate in funding and evaluation of providing alternate river crossing or trail access to replace ACT crossing.

***Minimize Trail User Conflicts Due to Increased Public Access***

**Commitment:** Design and improve trails to accommodate designated uses and avoid conflicts between multiple user types.

**Responsible Parties:** Reclamation/CDPR

<b>Location:</b>	Project area trails
<b>Timing:</b>	Ongoing Project operations
<b>Monitoring:</b>	Maintain trail features and posted signs that indicate hours of operation and trail use designation; CDPR park staff and/or volunteers to assist in informing and enforcing trail uses.
<b>Reporting Requirements:</b>	No specific reporting requirements

**Description of Activities:**

Reclamation will require the Construction Contractor to construct trail and access road improvements from the Auburn Dam batch plant parking area to Oregon Bar and to the North Fork American River turnaround/handicap-accessible parking area with proper width and informational/directional signage.

Through the management agreement for the Auburn SRA, Reclamation will require CDPR to monitor sign conditions, and repair or replace as needed. Additionally, CDPR staff and/or volunteers will provide enforcement of specific trail use rules and regulations in the Project area.

**Success Criteria:** Trail uses remain clearly demarcated and user conflicts avoided.

***Minimize Littering at Public River Access Locations***

<b>Commitment:</b>	Control litter within the Project area and nearby adjacent areas.
<b>Responsible Parties:</b>	Reclamation/CDPR
<b>Location:</b>	Project area/Maidu Drive
<b>Timing:</b>	Ongoing Project operations
<b>Monitoring:</b>	Monitor adequacy of trash containers provided as part of Project; increase number, if needed
<b>Reporting Requirements:</b>	No specific reporting requirements

**Description of Activities:**

Through the management agreement for Auburn SRA, Reclamation will require CDPR to provide and maintain animal-proof trash containers at several locations in the public river access areas, including the Maidu Drive entrance, Auburn Dam batch plant parking area, Oregon Bar turnaround (at Cardiac Hill trailhead), near Oregon Bar, and at the riverside turnaround/handicap-accessible parking lot. CDPR's park staff and volunteer patrols will work to enforce litter control rules.

**Success Criteria:** Document placement and maintenance of trash containers.

***Provide Disabled Access Parking Area***

<b>Commitment:</b>	CDPR will coordinate with the lead agencies on design specifics to provide disabled river users with parking and river access.
<b>Responsible Parties:</b>	CDPR/Reclamation

<b>Location:</b>	Project area
<b>Timing:</b>	Ongoing Project operations
<b>Monitoring:</b>	No specific monitoring requirements
<b>Reporting Requirements:</b>	No specific reporting requirements

**Description of Activities:**

Reclamation will require the Construction Contractor to grade and construct three handicap-accessible parking spaces adjacent to the riverside turnaround, including one van accessible space. Design/construction will include placement of base rock and vibra-packing or rolling to provide a firm compact surface.

Reclamation will require the Construction Contractor to install signs indicating “loading zone, no parking” at the turnaround and signs indicating handicap-accessible parking, as appropriate.

Reclamation will require the Construction Contractor to create a short trail meeting American Disabilities Act standards. The trail will consist of compacted gravel will lead from the handicap-accessible parking lot to a location near the river.

**Success Criteria:** Provision of handicap-accessible river access.

## 3.9 VISUAL RESOURCES

### 3.9.1 AFFECTED ENVIRONMENT

#### 3.9.1.1 Regional Setting

The regional setting includes visual resources that may be indirectly affected by the Proposed Project or alternatives through reductions in flows or reservoir elevations due to changed CVP and SWP operations that result in a change in visual character of the water body. Regional water resources included in this evaluation include the Sacramento River from Trinity and Shasta reservoirs downstream to the Delta, the American River from Folsom Reservoir downstream to the mouth at the Sacramento River confluence, Oroville Reservoir, and the Feather River. The visual resources of these water bodies and waterways are described in the Cumulative Report (Appendix D of the Draft EIS/EIR).

#### 3.9.1.2 Project Area Setting

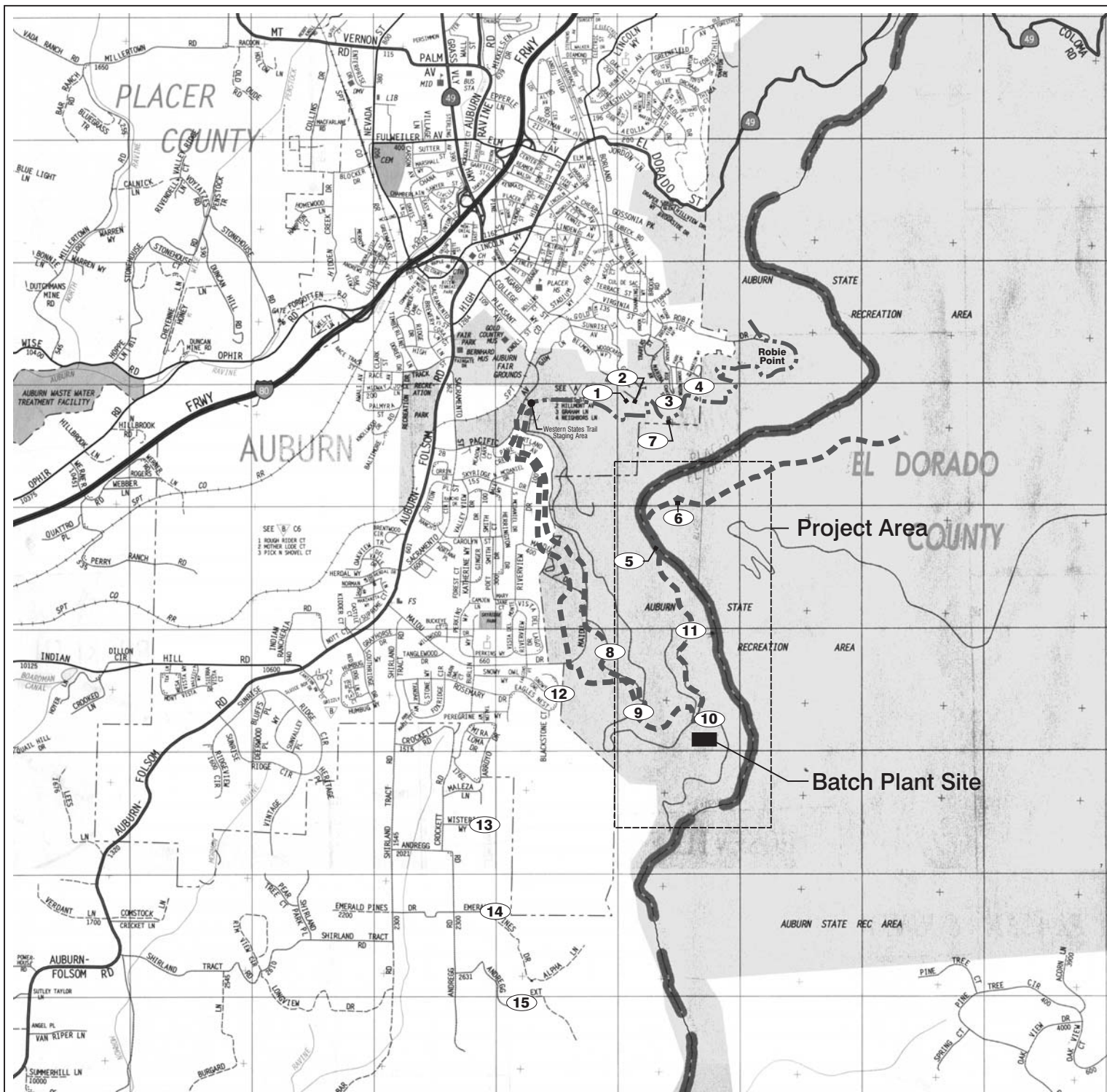
The project area represents the direct effect study area and encompasses the views/visual resources of the Middle Fork American River from below Ralston Afterbay and the North Fork American River from the confluence with the Middle Fork to just downstream of Oregon Bar (Figure 2-2). This area includes homes on the western rim of the canyon from which construction activities or project features could be visible to residents or recreationists.

##### North Fork American River

The Bureau of Land Management (BLM) conducted a habitat study along a five-mile segment of the North Fork American River from the bypass tunnel inlet upstream to the North Fork Debris Dam (which forms Lake Clementine). Through this study, the BLM determined this five-mile river segment is high quality foothill-canyon habitat with low habitat fragmentation due to human activities. The BLM assigned Outstandingly Remarkable Resource values to this river segment for scenic resources.

##### Project Area

The study area lies within Placer and El Dorado counties, with the river at the boundary of the two counties. The homes on the rim of the western side of the canyon are in Placer County, some within the Auburn city limits (**Figure 3.9-1**). (There are no homes with views of the project area on the El Dorado County side of the canyon.) CDPR maintains recreation trails that pass through or near the site. The Auburn-to-Cool Trail and the Western States Trail were selected as having representative views of the project site. Both trails are used frequently by hikers and equestrians; the Auburn-to-Cool Trail also is open to mountain bikers. (Refer to Section 3.8, Recreation, for a more detailed discussion of these trails.)



Scale 0 2000 feet

## LEGEND

- Auburn-to-Cool Trail
- Western States Trail
- ① Key Viewpoints (see key below)

## Viewpoints Key

- |   |                                     |
|---|-------------------------------------|
| 1 - Ridgetop-Gold West Viewpoint          | 8 - Foresthill Bridge Viewpoint     |
| 2 - Ridgetop-Gold East Viewpoint          | 9 - Construction Yard Viewpoint     |
| 3 - Ridgetop-Rio Camino Viewpoint         | 10 - Auburn Dam Batch Plant Plateau |
| 4 - Ridgetop-Placerado Viewpoint          | 11 - Auburn-to-Cool Trail           |
| 5 - Auburn-to-Cool Canyon Floor Viewpoint | 12 - Eagles Nest Viewpoint          |
| 6 - Auburn-to-Cool Cofferdam Viewpoint    | 13 - Wisteria Street Viewpoint      |
| 7 - Western States Trail Viewpoint        | 14 - Emerald Pines Drive Viewpoint  |
|   | 15 - Andregg Road Viewpoint         |

**Figure 3.9-1 Location of Viewpoints**

## 3.9.2 ENVIRONMENTAL CONSEQUENCES/IMPACT ANALYSIS

### 3.9.2.1 Methodology

#### Facilities-Related Analysis Approach

To evaluate impacts on the visual resources of the project study area, the size and character of the alternatives' structures and facilities were examined by consulting with the project design team. In addition, sensitive receptors were identified by reviewing aerial photographs and topographic maps, and by conducting site visits. Specific viewpoints of project components from these receptors were identified during field visits.

#### *Sensitive Receptors/Viewpoints*

Facility construction, operations, and maintenance would occur in the project area. Two categories of sensitive receptors were identified in the project area: recreationists and residents. These sensitive receptors were identified as valuing the scenic quality of their views integrally with their use of the area.

To assess the potential for visual impacts on these sensitive receptors, one or more viewpoints were selected for each receptor category to characterize views from various receptor locations. Impacts were identified based on the following criteria:

- ❑ The extent to which project components are visible from the viewpoint (e.g., duration of views from a trail, how many project components can be seen);
- ❑ The clarity of views from the viewpoint (e.g., whether the view is obstructed by trees); and
- ❑ The distance from the project site to the viewpoint.

These receptors were evaluated from the following types of viewpoints: (1) ridgetop residences on the western rim of the canyon; (2) recreationists on the Auburn-to-Cool Trail; (3) recreationists on the Western States Trail; and (4) recreationists in the Oregon Bar area. The sensitive receptors are grouped in this manner because they represent relatively distinct geographic locations with corresponding distinct visual perspective of the study area. Although subviewpoints are identified for the Auburn-to-Cool Trail and Ridgetop Homes, the views are relatively similar within each viewpoint.

These viewpoints are described below, and their locations and project component views are depicted on Figure 3.9-1

#### Ridgetop Homes (Viewpoints 1 to 4)

Most of the residences near the edge of the western (Placer County) side of the canyon have views of the upper half of the canyon, or of the El Dorado County side, but not the canyon floor or Placer County canyon slopes where the Proposed Project alternatives' components would be

located. Homes that would have the “greatest” potential for views of the proposed facilities, referred to here as the Ridgetop Homes Viewpoints, have clearer views of the study area than most of the Ridgetop Homes.

The Ridgetop Homes Viewpoints include: Gold Street West, Gold Street East, Rio Camino, and Placerado, Viewpoints 1 through 4, respectively.

From the Ridgetop Homes Viewpoints, the canyon appears mostly natural and is generally covered with vegetation. The viewpoints generally have good views of the upper half of the canyon, but less clear views of the lower half. Some canyon wall defacing is evident (e.g., the keyway), as well as portions of the gravel deposits which fill the dewatered river stretch. The river stretch downstream of the bypass tunnel outlet is more consistently visible than the dewatered stretch, and in some cases it is not apparent that the river’s course has been altered. In addition, the distance to the site lessens the unnatural-looking aspects of the canyon.

*Auburn-to-Cool Trail (Viewpoints 5, 6, 8, 9, 10 and 11)*

The Auburn-to-Cool Trail begins at the Auburn Overlook (for equestrians) and at Maidu Drive (for mountain bikers). It follows a construction access road down the canyon, crosses the dewatered river stretch between the tunnel outlet and the cofferdam, climbs the side of the cofferdam, and continues along Salt Creek towards Cool. The Auburn-to-Cool Trail viewpoints include the canyon floor and the cofferdam, Viewpoints 5 and 6, respectively, and four points along the trail beginning at Viewpoint 8 near Maidu Drive and descending into the canyon approximately 600 feet to Viewpoint 11.

The canyon floor is not visible from the Auburn-to-Cool Trail until just before the trail reaches the canyon floor near the bypass tunnel outlet (Viewpoint 5). From this vantage point, and also as the trail crosses the dewatered channel, most of the canyon floor and Placer County canyon side is visible. As the trail ascends the cofferdam, most of the canyon floor and Placer County canyon side remain in sight, but views of the upstream river segment replace the downstream segment.

From Viewpoints 5 and 6, the canyon appears mostly altered, and has relatively little vegetation. Viewpoints near 5 and 6 generally have good views of the lower half of the canyon, and good views—but at a greater distance and at a less natural line-of-sight—of the upper half of the canyon. For virtually the entire length of the trail on the canyon floor, the canyon wall alterations (e.g., the keyway and excavations) are very evident, as are the gravel deposits which fill the dewatered stretch. The upstream river stretch is visible as recreationists reach the cofferdam, and continues to be visible as the trail continues down Salt Creek. The dewatered river canyon segment is still visible facing west, but recreationists can see the upstream river stretch facing east. As the trail continues towards Salt Creek, the dewatered canyon segment slowly recedes from sight, and the upstream river segment remains in view. The view upstream is one of a virtually unaltered river canyon. The existing seasonal pump station and sump pond are the exception to the natural views in the upstream river channel.

From Viewpoints 8 through 11, views into the canyon are obstructed by trees and hillsides. Viewpoint 8 has a clear view of the Forresthill Bridge on the North Fork American River and a view of Auburn Dam excavation on the upper east side of the canyon, but no view directly into the canyon floor. Similar views can be seen at the construction storage yard (Viewpoint 9) and the batch plant (Viewpoint 10). At Viewpoint 11, views into the canyon are entirely blocked by vegetation.

#### Western States Trail (Viewpoint 7)

The trailhead for the Western States Trail is immediately north of the Auburn Dam Overlook. The trail continues along the Placer County side of the canyon at an elevation of approximately 1,100 feet. The trail crosses the river just downstream of the confluence of the North and Middle forks at the No Hands Bridge. The trail then follows the Middle Fork American River to the town of Foresthill and beyond.

As the trail descends from the Western States Trail staging area, recreationists have their best view of the canyon just past where a trail from Marina Avenue joins the main trail. This location is identified as the Western States Trail Viewpoint (Viewpoint 7).

As the trail continues to Robie Point, near a sharp westward bend of the river, recreationists occasionally have a view of the upper portion of the canyon and the upstream river stretch, but cannot see the canyon floor or the Placer County side of the canyon where the Proposed Project alternatives' components would be sited. Therefore, no additional viewpoints were selected.

From this viewpoint, there is a good view of both the upper and lower portions of the canyon. Therefore, recreationists can see both the natural-looking upper portion and the Auburn Dam construction-altered lower portion. The canyon wall excavation and spoils areas are evident, as are portions of the boulder and gravel cofferdam remnant deposits which fill the dewatered stretch. Existing seasonal pump station construction access roads that traverse the site are visible. The dewatered river stretch is as visible as the downstream stretch. Overall, the canyon appears unnatural-looking, both in general and compared to the surrounding area.

#### Ridgetop Homes (Viewpoints 12, 13, 14, and 15)

From the western side of the canyon extending south toward Folsom Reservoir, the homes along the ridgetop have the greatest potential to see into the canyon floor and the construction site at Oregon Bar. Viewpoint 12 is not able to view the riverbed because the Eagles Nest neighborhood sits too far back on a gently sloping ridge. Trees and the hillside are all that are visible at that site. Even further south at Viewpoint 13, trees block direct view into the canyon; although the hillside itself is not obstructing the direct view to Oregon Bar. At the top of Emerald Pines Drive (Viewpoint 14), residents have direct view of both Oregon Bar and the batch plant site looking northeast. These homes sit at the crest of a very sharply sloped hill facing northeast. Several of the homes on Andregg Road also have direct northeast-facing views of Oregon Bar and the batch plant sites at a line of sight distance of about one mile.

### *Other Sensitive Receptors/Viewpoints*

The recreation trails in the vicinity of Oregon Bar would have views of the parking area and road and trail improvements proposed under the Proposed Project. As these facilities would be designed and operated to support existing and anticipated recreation uses in this local area, there would be no adverse effect on visual resources.

CDPR is planning to re-establish the trail along the Old Railroad Grade as a multi-use trail (Wells 1998). The trailhead would be at the Auburn Dam Overlook, and the trail would end at the confluence of the North and Middle forks. This trail would generally parallel the Western States Trail in the vicinity of the project site at a lower elevation. Therefore, the viewpoints for this trail would be very similar to those for the Western States Trail. Because this trail is not yet in place, it is not discussed further in this document.

The Auburn Dam Overlook was not considered a sensitive viewpoint for visual impacts because the canyon floor is generally not visible from this location. The only portion of the North Fork American River that is visible is downstream of the bypass tunnel outlet. None of the dewatered stretch, or the upstream river segment can be seen. Therefore, none of the Action Alternatives' structures would be visible.

### **Diversion-Related Analysis Approach**

Increased water diversions and changes in CVP operations associated with the Proposed Project or alternatives could result in changes in river flow patterns and fluctuations in reservoir surface water elevations within the study area. Significant reductions in river flows would result in a reduced river expanse, which can contribute to the thinning of the riparian corridor, loss of valuable border zone vegetation, and subsequent degradation of wildlife habitat. In general, fluctuations in surface water elevations are considered an accepted feature of these reservoirs. However, large decreases in surface water elevations can result in significant increases in the drawdown zone around the edge of the reservoir. Because drawdown zones are typically unvegetated, decreases of greater than 10 feet are generally considered to be visually significant.

To evaluate diversion-related effects upon regional water bodies, visual impacts were analyzed based on a comparison of surface water elevations and river flows under existing and future scenarios with and without the project. Because the Action Alternatives would result in the same effect upon the regional system, they are evaluated together. Hydrologic modeling results were reviewed to determine whether reductions in reservoir elevations or river flows, if identified, would affect the visual character of the water bodies within the study area. The model simulations and comparisons are described in Section 3.3.2. Refer to the Hydrologic Modeling Technical Memorandum for additional detail (Appendix E of the Draft EIS/EIR).

### **3.9.2.2 Applicable Laws, Ordinances, Regulations, and Standards**

The City of Auburn, the counties of Placer and El Dorado and CDPR have jurisdiction or management responsibilities over lands surrounding the project site. Visual resources-related objectives and policies expressed in the respective city and county general plans and CDPR

resource management plan, are listed below (City of Auburn 1993; Placer County 1994; El Dorado County 1995; CDP and Reclamation 1992).

### **City of Auburn**

*Policy 5.4* In making land use decisions, recognize the trail development and recreational potential of major open space features such as:

Major Ridge Tops: Ridge tops offer outstanding scenic value and have the potential to be linked to existing trails. Development should not detract from the overall viewshed quality of and from the ridge top.

### **Placer County**

*Goal 1.K:* To protect the visual and scenic resources of Placer County as important quality-of-life amenities for county residents and a principal asset in the promotion of recreation and tourism.

*Policy 1.K.1* The County shall require that new development in scenic areas (e.g., river canyons, lake watersheds, scenic highway corridors, ridgelines and steep slopes) is planned and designed in a manner which employs design, construction, and maintenance techniques that:

- a. Incorporate design and screening measures to minimize the visibility of structures and graded areas.
- b. Maintain the character and visual quality of the area.

*Policy 1.K.2* The County shall require that new development in scenic areas be designed to utilize natural landforms and vegetation for screening structures, access roads, building foundations, and cut and fill slopes.

*Policy 1.K.5* The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should be installed underground and roadways and parking areas should be designed to fit the natural terrain.

*Policy 1.K.6* The County shall require that new development on hillsides employ design, construction, and maintenance techniques that:

- d. Maintain the character and visual quality of the hillside.

### **El Dorado County**

*Objective 7.6.1* Importance of Open Space

*Policy 7.6.1.1* [Primary purposes of open space include:]

C. Maintaining areas of importance for outdoor recreation including areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes including those providing access to lake shores, beaches and rivers and streams; and areas which serve as links between major recreation and open space reservations including utility easements, banks of rivers and streams, trails and scenic highway corridors.

### **California Department of Parks and Recreation**

The project area is located within the Auburn SRA, which is operated by the CDPR. The Auburn Interim Resource Management Plan (CDPR and Reclamation 1992) for the site lists general “constraints” that were considered in the planning process, which includes the following statement:

Since the biological, natural, cultural, and visual resources are valuable and integral components to the Auburn SRA and the surrounding areas, they should be protected to the extent possible when various facilities, improvements, or projects occur.

Specific management guidelines were developed in the Interim Plan to direct existing and potential land uses and activities in the Auburn SRA. Guidelines that relate to visual resources are listed below.

#### *Design Standards of New Facilities*

6. Structures should be screened from view with vegetation or other naturally occurring features whenever possible.

#### *Scenic Viewshed*

1. The viewshed is to be maintained. Development should be located outside of scenic areas, adjacent to existing structures, or along the edges of scenic areas where vistas will be less interrupted. Development should not be allowed on ridgelines.
2. Newly proposed roads, parking areas, and other developments should be evaluated to determine their effects on scenic quality. Proposals that would have an adverse impact on the viewshed should be revised or rejected.

### **3.9.2.3 Impact Indicators and Significance Criteria**

Significance criteria were developed based on local general plan objectives and policies, the CDPR resource management plan guidelines and the CEQA Guidelines Environmental Checklist (CEQA Appendix G). Impact indicators were developed using visual component characteristics and PROSIM modeling output for river flows and reservoir surface elevation. **Table 3.9-1** presents the impact indicators and significance thresholds used to evaluate the project. Impacts

to visual resources were considered less than significant if they did not violate or exceed these thresholds.

Table 3.9-1 Visual Resources Impact Indicators and Significance Criteria	
Impact Indicators	Significance Criteria
<input type="checkbox"/> The contrast, including size and visual character, of project components within the visual setting of the project area.	<input type="checkbox"/> Are inconsistent with relevant city or county general plan policies or guidelines.
<input type="checkbox"/> The visibility of project components from sensitive viewpoints.	<input type="checkbox"/> Substantially change the character of the landscape/view in terms of both physical characteristics and land use types, as visible from sensitive viewpoints.
<input type="checkbox"/> Monthly mean flows (cfs) of the American, Sacramento, and Feather rivers.	<input type="checkbox"/> A decrease in flow, relative to the basis of comparison, contributing to substantial reduction in the width of the riparian corridor or loss of valuable riparian vegetation and/or habitat sufficient to adversely affect the visual character.
<input type="checkbox"/> Monthly mean surface water elevation of Folsom, Shasta, Trinity, and Oroville reservoirs.	<input type="checkbox"/> A decrease in monthly mean surface water elevation of more than 10 feet, relative to the basis of comparison, of the study area reservoirs with sufficient frequency to adversely affect the visual character.

### 3.9.2.4 Impact Analysis

This section presents the analysis of potential facilities- and diversion-related visual resources impacts. A summary of the impact issues, level of significance, and environmental protection and mitigation measures is provided in the Executive Summary to the Final EIS/EIR, Table S-5.

#### Facilities-Related Impacts

##### *No Action/No Project Alternative*

*Impact 3.9-1: Construction effects on the character of the landscape from the residential viewpoints.*

No Action/No Project Alternative installation and removal would be virtually the same as under existing conditions with regard to visual impacts. There would be no substantial change in the types of construction activities at the seasonal pump station and diversion structure locations. The existing seasonal pump station and diversion structure are not visible from the residential viewpoints. Only a few road segments, which would be used for construction travel, are visible from the residences north of the project site (Viewpoints 1, 2, 3, and 4). Therefore, the only visual impact of construction activities would be the potential increased frequency of construction traffic on the road segments if the seasonal pump station is dismantled and reinstalled in years with high flows early and/or late in the operating season. Nevertheless, the limited visibility of the seasonal components would result in less-than-significant impacts to the residential viewpoints.

*Impact 3.9-2: Construction effects on the character of the landscape from the Western States Trail Viewpoint.*

Only a few road segments are visible from the Western States Trail Viewpoint, and for less than 100 feet along the trail. Therefore, construction activities associated with the No Action/No Project Alternative would be less than significant. For a further discussion of this impact, refer to Impact 3.9-1.

*Impact 3.9-3: Operations effects on views from residential viewpoints.*

The seasonal pump station and sump pond are not visible from any of the residential viewpoints; therefore, there would be no visual impact upon these receptors.

*Impact 3.9-4: Operations effects on the character of the landscape from the Auburn-to-Cool Trail Viewpoints.*

The seasonal pump station and sump pond are not visible from the Canyon Floor Viewpoint (5); however, they are visible from the Cofferdam Viewpoint (6). The pump station and sump pond would not change in appearance under this alternative, however, the pump station would be in place up to four additional months each year. Because materials (e.g., pipeline) related to the seasonal pump station remain at the site year-round, this would not be a substantial change in the landscape; the visual impacts would be negligible.

*Impact 3.9-5: Operations effects on the character of the landscape from the Western States Trail Viewpoint.*

The existing seasonal pump station and sump pond are not visible from the Western States Trail viewpoints; therefore, there would be no visual impacts.

### ***Proposed Project***

*Impact 3.9-6: Construction effects on the character of the landscape from the residential viewpoints.*

Overall, the visible extent of the construction activities from the Ridgetop Homes is fairly limited.

- ❑ From the Gold Street West Viewpoint, the construction staging area would not be visible, however, much of the construction vehicle traffic would be. No project facility construction sites would be visible.
- ❑ From the Gold Street East Viewpoint, the construction staging area and most of the road would not be visible, nor would the pump station and intake construction sites.
- ❑ From the Rio Camino Viewpoint, the construction staging area and much of the construction vehicle traffic would be visible.

- From the Placerado Viewpoint, some of the pump station access road would be visible from this viewpoint; therefore, construction vehicle traffic would be visible. The construction staging area and the pump station and intake facilities would not be visible.

Because only some of the construction activities would be intermittently visible from these sites and would not differ substantially from the existing or No Action/No Project Alternative annual construction activities of the seasonal pump station, the visual impacts would be less than significant.

From the Emerald Pines Drive (14) and Andregg Road (15) viewpoints (residential area south of project site), both the Oregon Bar area, including the batch plant construction site, is clearly visible. These viewpoints are shared by at least 6 homes. The proposed construction activities and associated construction traffic would be visible. Construction activities would involve the use of heavy machinery such as cement trucks and backhoes for a likely duration of up to two months. Under existing conditions the batch plant site is a disturbed and unnatural site void of natural vegetation, landscaped, and filled with mounds of gravel.

Due to the limited nature of the proposed construction activities at the Oregon Bar site, the existing disturbed condition of the batch plant site, and the limited number of residents with direct view of this construction site, visual impacts associated with the parking lot construction and access road improvements would likely be less than significant as compared to existing or No Action/No Project Alternative.

*Impact 3.9-7: Construction effects on the character of the landscape of the Western States Trail Viewpoint.*

The construction staging area and some of the construction vehicle traffic would be visible from this viewpoint. Views of these project construction activities would be less than clear and complete, and for a very limited stretch (approximately 100 feet) of the trail from a distance of one-quarter mile. Because of the limited visibility of project construction, and the less than substantial differences from existing condition or No Action/No Project Alternative annual construction activities, the visual construction impacts of this alternative would be less than significant.

Auburn-to-Cool Trail access would be limited during heavy construction activities; therefore, the impacts on viewpoints from the trail during construction would be considered less than significant. Recreation impacts from the trail closure are discussed in Section 3.8, Recreation.

*Impact 3.9-8: Operations effects on the character of the landscape from the residential viewpoints.*

Only the Placerado Viewpoint (4) would be able to see the new pump station; however, operations and maintenance traffic along several road stretches would be visible from all viewpoints. The visual impacts of the addition of the project components would be less than significant because of the limited views of the facilities from these viewpoints. The restored river channel would enhance the views of the canyon floor compared to existing or No

Action/No Project and Upstream Diversion alternative conditions for the Gold Street East, Rio Camino, and Placerado viewpoints north of the project site. The overall impact on views from these homes would be potentially beneficial.

*Impact 3.9-9: Operations effects on the character of the landscape from the Western States Trail Viewpoint.*

Short road segments would be visible from this viewpoint so recreationists would infrequently see operations and maintenance vehicles. Because of the limited visibility of project components, and the lack of substantial changes to the character of the landscape, the visual impacts would be less than significant.

*Impact 3.9-10: Operations effects associated with use of the parking and staging facilities on the visual character of the project site.*

Visual changes in the project area associated with public river access at Oregon Bar would include the presence of a staffed CDPR entrance station, parking and turnaround areas, improved roads, and recreation-related public use. Related visual impacts may include public vehicles lined up at the entrance station; however, public access would be controlled and monitored at the entrance station and limited to the number of available parking spaces. The majority of new recreationists are anticipated to be boaters who would be using the project site exclusively as a pull-out destination rather than prolonged visitation. CDPR maintenance personnel would remove trash generated by public use of the project site. Overall, residences at the Ridgetop Homes (see Figure 3.9-1) (Viewpoints 1 through 4) would have no views of the parking lot and turnaround area near the dewatered channel.

These facilities would not be visible from the Western States Trail, except for very limited stretches because views from the trail toward the canyon floor are almost completely obstructed by trees downslope of the trail. Approximately half of the river channel would be visible from this viewpoint. Restoring the river would improve the visual setting of this viewpoint; therefore, a beneficial visual impact would result under this alternative.

The Oregon Bar area, including the batch plant construction site, is clearly visible from homes south of the project site (Figure 3.9-1, Viewpoints 14 and 15). Under the existing condition, these residents view a disturbed and unnatural site at the batch plant area. The proposed parking lot would result in additional graded ground surfaces and additional recreational use of the area as compared to the existing condition or the No Action/No Project Alternative. These facilities would be "rustic" to minimize changes to the character of the area and would be consistent with the intent of river-related recreation planning goals.

Due to the disturbed nature of the site, presence of recreation already in the area and the rustic design considerations, these proposed facilities would be expected to result in a less-than-significant impact.

*Upstream Diversion Alternative*

*Impact 3.9-11: Construction activities effects on the character of the landscape from the residential viewpoints.*

As described for the Proposed Project, only some of the construction activities would be visible from the residential viewpoints north of the project site. These activities would be primarily related to construction vehicle access and storage, and would not differ substantially from the arrival of construction activities under existing or No Action/No Project Alternatives. Visual impacts due to construction also would be limited to the duration of the project construction period and would no longer occur on an annual basis. Overall, construction-related activities would result in less-than-significant visual effects.

*Impact 3.9-12: Construction effects on the character of the landscape from the Western States Trail Viewpoint.*

The construction staging area, pump station construction activities, and some of the construction vehicle traffic would be visible from this viewpoint. Views of these project construction activities would be less than clear and complete, and for a very limited stretch (approximately 100 feet) of the trail from a distance of one-quarter mile. Because of the limited visibility of project construction, and the less than substantial differences from existing or No Action/No Project Alternative annual construction activities, the visual impacts of this alternative would be less than significant.

*Impact 3.9-13: Operation effects on the character of the landscape from the residential viewpoints.*

The only project component visible from the Rio Camino Viewpoint would be the pump station, and from the Gold Street East viewpoint, only the top of the pump station. No project components would be visible from the Gold Street West and Placerado viewpoints. Operations and maintenance traffic would be visible for several road stretches from all viewpoints. Despite the generally natural views of the canyon from these viewpoints, the visual impacts of changes compared to existing or No Action/No Project Alternative operations would be less than significant because of the limited views of the project components from these viewpoints.

*Impact 3.9-14: Operation effects on the character of the landscape from the Auburn-to-Cool Trail Viewpoints.*

The Proposed Project features would have a less-than-significant impact because, while it would somewhat lessen the visual value of one viewpoint, it would substantially improve the visual qualities of another.

The year-round pump station would be visible from both viewpoints, and from the Cofferdam Viewpoint, the intake diversion structure also would be visible. Operations and maintenance traffic would be visible for several road stretches from both viewpoints. The pump station would be enclosed in a pump house constructed of steel panels, painted a light/neutral tone to blend

with the surrounding area. Therefore, the net visual impacts of the changes would be less than significant.

*Impact 3.9-15: Operation effects on the character of the landscape from the Western States Trail Viewpoint.*

Only the year-round pump station would be visible from this viewpoint. Short road segments are visible from this viewpoint, so recreationists would infrequently see operations and maintenance vehicles. Because of the limited visibility of project components, and the lack of substantial changes to the character of the landscape, the visual impacts would be less than significant.

### ***Cumulative Facilities-Related Impacts***

No substantial adverse changes to the visual character of the canyon would be expected to occur with the project alternatives; Foresthill Bridge modifications would provide improvement. No significant cumulative impact would result.

### **Diversion-Related Impacts**

The diversion-related analysis refers to certain tables and graphs prepared to provide additional representation of the modeling results and comparison of simulated conditions. These tables and figures are included in Appendix H to the Draft EIS/EIR and are labeled by the appendix letter, resource section number, and ordered as it is referenced in the impact analysis (H-3.9-1, H-3.9-2, etc.).

### ***No Action/No Project Alternative***

The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant reductions of river flows or reservoir elevations such that visual resources would be adversely affected.

### ***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the Existing Condition***

The Proposed Project and the Upstream Diversion Alternative would result in the same timing and quantity of increased diversions from the American River. Changes in CVP or SWP operations associated with the Action Alternatives also would be the same. Therefore, the diversion-related analysis presented below represents the potential impacts that could occur with the Action Alternatives. Visual resources in the upper American River would not be impacted by changes in MFP operations.

*Impact 3.9-16: Operations effects on the visual character of Folsom Reservoir.*

There were no years in the 70-year period of record in which the Action Alternatives would result in reductions of surface water elevations of greater than 10 feet. Therefore, the visual impact of the Action Alternatives' reduction in surface water elevations at Folsom Reservoir is considered less than significant.

*Impact 3.9-17: Operations effects on the visual character of the lower American River.*

Changes in river flow patterns would not result in a significant visual effect because (1) releases from the lower American River must maintain adequate instream flows for fishery, wildlife, recreational, and aesthetic values (based on the Hodge standard); (2) fluctuations in river flows are a common occurrence along the lower American River, and (3) Action Alternatives' diversions result in insignificant differences in lower American River flows at H Street Bridge and at the mouth compared to existing conditions.

*Impact 3.9-18: Operations effects on the visual character of Trinity and Shasta reservoirs.*

As with Folsom Reservoir, there were no years in the 70-year period of record in which the Action Alternatives would result in reduction of surface water elevation of greater than 10 feet. Therefore, the visual effect of the Action Alternatives' reduction in surface water elevations at Trinity and Shasta reservoirs is considered less than significant.

*Impact 3.9-19: Operations effects on the visual character of the upper Sacramento River, lower Sacramento River, and Sacramento-San Joaquin Delta.*

Changes in river flow patterns throughout the Sacramento River and Delta would not result in significant visual effects because (1) fluctuations in river flows are a common occurrence throughout the Sacramento River and Delta, and (2) Action Alternatives result in insignificant differences in Sacramento River flows at Keswick and Freeport compared to the existing condition.

*Impact 3.9-20: Operations effects on the visual character of Oroville Reservoir and the Feather River.*

The Action Alternatives would not result in substantial changes in storage or elevation at Oroville Reservoir, or in flow in the Feather River, relative to the existing condition. Any small changes that might occur would be considered less-than-significant impacts upon visual resources.

***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the No Action/No Project Alternative in the Future (2025)******Impact 3.9-21: Operations effects on the visual character of Folsom Reservoir.***

There is one month in the 70-year period of record in which the Action Alternatives would result in a reduction of surface water elevation of greater than 10 feet compared to the No Action/No Project Alternative. This reduction would occur in the winter (February) when there is considerably less aesthetic concern of the reservoir. The visual impact of the reduction in surface water elevations at Folsom Reservoir from the Action Alternatives is considered less than significant.

***Impact 3.9-22: Operations effects on the visual character of the lower American River.***

Changes in river flow patterns would not result in a significant visual effect because (1) releases from the lower American River must maintain adequate instream flows for fishery, wildlife, recreational, and aesthetic values (based on the Hodge standard); (2) fluctuations in river flows are a common occurrence along the lower American River, and (3) diversions from the Action Alternatives would result in insignificant differences in lower American River flows at H Street Bridge and at the mouth compared to the No Action/No Project Alternative.

***Impact 3.9-23: Operations effects on the visual character of Trinity and Shasta reservoirs.***

There were no years in the 70-year period of record in which the Action Alternatives would result in reductions of surface water elevations of greater than 10 feet compared to the No Action/No Project Alternative. Therefore, the visual effect of reductions in surface water elevations at Trinity and Shasta reservoirs from the Action Alternatives is considered less than significant.

***Impact 3.9-24: Operations effects on the visual character of the upper Sacramento River, lower Sacramento River, and Sacramento-San Joaquin Delta.***

Changes in river flow patterns throughout the Sacramento River and Delta would not result in significant visual effects because: (1) fluctuations in river flows are a common occurrence throughout the Sacramento River and Delta, and (2) pump station project diversions and changes in CVP operations associated with the Action Alternatives result in insignificant differences in Sacramento River flows at Keswick and Freeport compared to the No Action/No Project Alternative.

***Impact 3.9-25: Operations effects on the visual character of Oroville Reservoir and the Feather River.***

The Action Alternatives would not result in substantial changes in storage or elevation at Oroville Reservoir, or in flow in the Feather River, relative to the No Action/No Project Alternative. Any small changes that might occur would be considered less than significant impacts upon visual resources.

### *Cumulative Impacts*

The cumulative impact assessment is based on a comparison of anticipated future cumulative conditions (2025) to existing conditions. In instances where a potentially significant or significant cumulative effect is identified, an additional evaluation of the Action Alternatives' incremental contribution to the cumulative condition is assessed. See the Hydrologic Modeling Technical Memorandum (Appendix E of the Draft EIS/EIR) for additional detail.

#### *Impact 3.9-26: Operations effects on the visual character of Folsom Reservoir.*

Under the cumulative condition, additional diversions and potential changes in CVP operations would result in more frequent declines in the water surface elevation of Folsom Reservoir. However, over the 70-year period of record, only 9 of 840 months (one percent of the simulation) would result in reductions of Folsom Reservoir surface water elevations of greater than 10 feet compared to the existing condition. Therefore, the visual impact of the cumulative condition's reduction in surface water elevations at Folsom Reservoir would be considered less than significant.

#### *Impact 3.9-27: Operations effects on the visual character of the lower American River.*

For the cumulative condition, additional diversions and potential CVP operations would result in decreases in lower American River flows. Because discernible aesthetic impacts along river corridors are primarily associated with adverse impacts to localized vegetation, the aesthetic quality of the lower American River, under cumulative conditions, could be adversely affected. As described in Section 3.6, Terrestrial Resources, the cumulative condition would not result in a substantial decrease in flows during the growing season. Therefore, the cumulative condition impact to the visual quality of the lower American River would be less than significant.

#### *Impact 3.9-28: Operations effects on the visual character of Trinity and Shasta reservoirs.*

Under the cumulative condition, additional diversions and potential changes in CVP operations would result in more frequent drawdowns in the water surface elevation of Trinity and Shasta reservoirs. The cumulative condition would result in reductions of surface water elevations of greater than 10 feet in 11 months at Shasta Reservoir and 13 months at Trinity Reservoir out of the 840-month period of record. Therefore, compared to existing conditions, the visual effect of the cumulative condition's reduction in surface water elevations at Trinity and Shasta reservoirs would be considered less than significant.

#### *Impact 3.9-29: Operations effects on the visual character of the upper Sacramento River, lower Sacramento River, and Sacramento-San Joaquin Delta.*

As described in the Section 3.6, Terrestrial Resources, the cumulative condition would not result in a substantial decrease in flows during the growing season for the upper or lower Sacramento River. Therefore, the cumulative condition impact to the visual quality of the upper and lower Sacramento rivers would be less than significant.

*Impact 3.9-30: Operations effects on the visual character of Oroville Reservoir.*

Compared to the existing condition, the cumulative condition would result in substantially lower long-term average end-of-month elevation for the March through September vegetation growing period, over the 70-year period of record. Long-term end of month elevation reductions for Oroville Reservoir would range from six feet to 18 feet. During individual years, reductions of up to 76 feet in end-of-month elevation would occur. As previously discussed, in many areas along the reservoir, during periods of relatively large reductions in water surface end-of-month elevation, the bare red and gray soils that become exposed create a drawdown zone that contrast vividly with the vegetated areas above the usual high water level and the water surface below. In narrow, steeply sided arms of the lake, large drawdowns can create conditions in which it appears that the lake is set within a deep, red-sided canyon. In areas where the slopes are gradual, large reductions in water surface elevation create areas that appear to be large reddish mudflats. Given the relatively large reduction in end-of-month water surface elevation, potentially significant visual resources impacts would occur at Oroville Reservoir under the cumulative condition.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in river flow would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives contribution to the cumulative condition would not be considerable.

*Impact 3.9-31: Operations effects on the visual character the Feather River.*

The largest long-term average flow reduction under the cumulative condition relative to the existing conditions would be 5.7 percent during the month of March. Conversely, long-term average flow increases under the cumulative condition relative to the existing condition would be up to 36.4 percent (i.e., August). However, because monthly mean flows for some months of the March through October growing period are already relatively low, reductions in flow may adversely affect riparian vegetation associated with the Feather River, and therefore represent a potentially significant impact to the visual quality.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in river flow would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives contribution to the cumulative condition would not be considerable.

### **3.9.2.5 Environmental Protection and Mitigation Measures**

Construction of the Proposed Project or Upstream Diversion Alternative would change the visual character of the project area. Design considerations to minimize visual impacts have been included in the Mitigation Plan (Appendix D to the Final EIS/EIR) as stated below.

***Blend Project Features with Surrounding Landscape***

<b>Commitment:</b>	Minimize visual quality impacts by designing Project features to blend with the surrounding landscape, to the extent feasible. Public river access features will be limited and “rustic.”
<b>Responsible Party:</b>	Reclamation
<b>Location:</b>	Project area
<b>Timing:</b>	Project design
<b>Monitoring:</b>	No specific monitoring requirements
<b>Reporting Requirements:</b>	No specific reporting requirements

**Description of Activities:**

Reclamation will ensure that final project design includes measures to blend the Project features into the surrounding landscape/viewshed. Preliminary Project design elements identified to minimize visual impacts include the following:

- ❑ Pump station will be composed of light colored split-face block to avoid introducing new source of glare to area.
- ❑ Intake will be designed and constructed to look like a natural component of the river channel.
- ❑ Bypass tunnel openings will be enclosed in such a way that the closure blends with the surrounding environment.
- ❑ Trails and access roads will be constructed to blend in with surrounding landscape. Limited improvements will be made such that these features are "rustic" in nature, consistent with the Auburn Interim Resources Management Plan.
- ❑ Removal of vegetation will be minimized to extent necessary to create trails, roads and fire breaks.

**Success Criteria:** Completed structures/features blend with surrounding area.

Incorporation of these design considerations minimizes the potential for visual impacts to less than significant.

## **3.10 CULTURAL RESOURCES**

### **3.10.1 AFFECTED ENVIRONMENT**

#### **3.10.1.1 Regional Setting**

The regional setting includes cultural resources that may be indirectly affected by the Proposed Project or alternatives. The cultural resources of the regional study area water bodies and waterways (CVP and SWP system facilities) are described in the Cumulative Report (Appendix D of the Draft EIS/EIR).

#### **3.10.1.2 Project Area Setting**

The Area of Potential Effect (APE) for cultural resources within the project area represents the direct effect study area and includes the river banks of the Middle Fork American River below Ralston Afterbay, to its confluence with the North Fork American River, and the North Fork American River extending from the confluence downstream to Oregon Bar. At the project site, the APE includes the areas of anticipated construction activity associated with each alternative.

The American River canyon upstream and downstream of the Auburn Dam construction site contains both prehistoric and historic archeological sites. Prehistoric sites consist primarily of bedrock milling stations and historic sites are generally related to historic mining. Some sites occur along the river bank and others are located further upslope. No recorded resources are known to occur within the proposed construction areas for any of the alternatives.

### **3.10.2 ENVIRONMENTAL CONSEQUENCES/IMPACT ANALYSIS**

#### **3.10.2.1 Methodology**

##### **Facilities-Related Analysis Approach**

Cultural resource records for the APE were reviewed and an on-the-ground examination of the APE was conducted. No previously recorded cultural resources were found within the APE. Field examination confirmed that all activity associated with the alternatives would fall within the footprint of Auburn Dam construction or areas previously influenced by related activity. The dam construction site is greatly altered and the area within the APE has been totally changed by dam construction and seasonal pump station installation/removal activities. No historic properties are present within the APE. The APE of the Proposed Project encompasses lands that would be developed for road improvements, a parking area at Oregon Bar, the pump station, and pipelines. The pump station and pipelines would be placed on existing cleared areas and roads. The proposed Oregon Bar parking area would be placed on an area that was cleared for storage of Auburn Dam construction materials.

**Diversion-Related Analysis Approach**

The impact assessment focuses primarily on fluctuations in water levels at water bodies within the regional study area. Increased fluctuations in water levels, exposure of previously inundated lands, or the inundation of previously exposed lands, may more rapidly degrade sensitive cultural sites along the perimeter of water bodies.

To evaluate diversion-related impacts to cultural resources, a comparison was made of reservoir surface water elevations and river flows under the existing condition and the Proposed Project using 70-year simulations (the Upstream Diversion Alternative would have the same diversion pattern as the Proposed Project—they are referred to as the Action Alternatives). Hydrologic modeling results were reviewed to determine whether changes in reservoir elevation or river flow, if identified, would be large enough to potentially affect the cultural resources underlying or adjacent to these water bodies. Modeling also was conducted and comparisons made for the future condition with and without the project and for the cumulative condition compared to the existing condition.

To evaluate potential impacts to cultural resources in and around the reservoirs, hydrologic modeling was performed to determine the changes in the minimum and maximum end-of-month water surface elevations for the conditions being compared (see Appendix E of the Draft EIS/EIR). If the reservoir's water surface elevation rises above the existing condition maximum water elevation, cultural resources previously untouched by water could be inundated. Conversely, a water surface elevation below the reservoir's minimum level could expose cultural resources that were previously submerged. Additionally, and perhaps more significantly, if the Proposed Project or alternatives would result in a shift in the zone of fluctuation, cultural resources located within the zone also could be potentially affected through increased exposure to erosion, hydrologic sorting caused by wave action, and breakdown of organic matter through repeated wetting and drying. Any changes in water levels caused by increased diversions or other changes in operation of the CVP system, have the potential to impact important or unevaluated cultural resources within a particular reservoir basin. It also is the case, however, that many of the cultural deposits in the upper part of a reservoir have been scoured down to bare granitic sand and bedrock.

Many of the recorded cultural resources within the study area have been inundated by earlier projects; a large number of these lie submerged under Folsom Reservoir. Studies of reservoir impacts to cultural sites have shown that the greatest impacts are from wave action, which erodes the deposit and moves artifacts, and from cycles of inundation and drawdown, which also cause erosion and movement, in addition to repeated wetting and drying of the deposit (Foster et al. 1977; Foster and Bingham 1978; Henn and Sundahl 1986; Lenihan et al. 1981; Stoddard and Fredrickson 1978; Ware 1989). These same studies suggest that sites that lie permanently submerged, for example, within the deep pool of a reservoir, suffer much less damage than those within the drawdown zone. For sites that already are submerged, continued submergence does not constitute an effect. However, inundation to sites that lie above the present waterline (and that have not been subject to inundation before) potentially would be an adverse effect. Additional wave impact on already eroded ground may be insignificant. Conversely, sites below

this zone have suffered much less from seasonal water-level fluctuations, and new impacts to these sites probably would be more significant in terms of data loss.

In order to estimate the magnitude and frequency of bank exposure and bank inundation along rivers in the study area, the maximum and minimum monthly flows over the 70-year period were compared.

### 3.10.2.2 Applicable Laws, Ordinances, Regulations and Standards

Cultural resources in California are regulated by the State Historic Preservation Office (SHPO) which was established by the National Historic Preservation Act of 1966. This office is responsible for administering preservation programs established by state and federal law, including the National Historic Preservation Act, the Archeological and Historic Preservation Act (P.L. 93-291), the American Indian Religious Freedom Act (P.L. 95-34), and the Archeological Resources Protection Act (P.L. 96-95). As required by Section 106 of the National Historic Preservation Act and CEQA, the SHPO, in conjunction with state and federal agencies, identifies resources that may be eligible for inclusion in the National Register of Historic Places. If a historic site may be affected by a project, the SHPO must review project impacts to that site and mitigation measures to reduce the significance of the impact. During this process, SHPO's Native American Coordinator ensures that Native American concerns for archaeological sites and other cultural properties also are considered.

### 3.10.2.3 Impact Indicators and Significance Criteria

Indicators of potential impacts were developed by evaluating the project scope, site conditions, and impact issues identified by the public. Applicable laws, ordinances, regulations, and standards and CEQA Guidelines also were consulted. Significance criteria were developed from the indicators to measure the impacts expected to occur from the Proposed Project and alternatives.

CEQA requires that *important* cultural resources be protected. The CEQA Guidelines define an important resource as one listed on, or eligible for listing on, the California Register of Historical Resources (PRC Section 5024).

In addition to CEQA compliance, any project that involves federal undertakings, lands, funds, or permits must comply with Section 106 of the National Historic Preservation Act (NHPA). This Act defines important (significant) resources as those listed on, or eligible for listing on, the National Register of Historic Places. National Register criteria are very similar to those for the State Register, defining an important cultural resource as one that is associated with important persons or events, or that embodies high artistic or architectural values, or that has scientific value (36 CFR 60.6). State Historic Landmarks, and any cultural resource that has been determined eligible to the National Register, automatically qualify for the State Register. Where a cultural resource has not been evaluated for its importance, it is treated as potentially important until an evaluation can be done. For this project, Reclamation, as the federal lead agency, has responsibility for project compliance with the NHPA.

Table 3.10-1 lists the impact indicators and significance criteria used in the evaluation of potential effects on cultural resources.

Table 3.10-1 Cultural Resources Impact Indicators and Significance Criteria	
Impact Indicators	Significance Criteria
<input type="checkbox"/> Important cultural resource sites or historic properties within the APE.	<input type="checkbox"/> Disturbance or damage of known or unknown cultural resources.
<input type="checkbox"/> Maximum, minimum and average end-of-month water surface elevation fluctuations and annual frequency of water level fluctuations for Folsom, Shasta, Trinity, and Oroville reservoirs.	<input type="checkbox"/> Substantial elevation or lowering water level fluctuation zone, relative to the basis of comparison, which would result in increased inundation of previously exposed areas or exposure of previously inundated lands with sufficient frequency to adversely affect sensitive cultural resources.
<input type="checkbox"/> Maximum and minimum monthly mean river flows on the American, Sacramento, and Feather rivers.	<input type="checkbox"/> Substantial increase in maximum monthly mean river flows or decrease in minimum monthly mean river flows, relative to the basis of comparison, which would result in increased inundation of previously exposed areas or exposure of previously inundated lands with sufficient frequency to adversely affect sensitive cultural resources.

### 3.10.2.4 Impact Analysis

This section presents the analysis of potential facilities- and diversion-related cultural resources impacts. A summary of the impact issues, level of significance, and environmental protection and mitigation measures is provided in the Executive Summary to the Final EIS/EIR, Table S-5.

#### Facilities-Related Impacts

##### *No Action/No Project Alternative*

*Impact 3.10-1: Effect of No Action/No Project Alternative on cultural resources in the project area.*

Continued installation and operation of the seasonal pump station facilities would occur in areas already disturbed by Auburn Dam-related construction activities and by past seasonal pump station-related earthwork. No known cultural resources would be disturbed by these activities. The potential to discover unknown resources would not differ from existing conditions. Therefore, the No Action/No Project Alternative would represent a less-than-significant impact upon these resources.

##### *Proposed Project*

*Impact 3.10-2: Effect of Proposed Project construction activities on cultural resources in the project area.*

There are no previously recorded cultural resources within the APE for the Proposed Project. The field examination confirmed that the project area falls within the Auburn Dam construction

site area, which has been totally altered by dam construction activities and by the previous placement of the seasonal pump station facilities. No historic properties are present within the APE; therefore, the Proposed Project would have no effect on historic properties. Because of the disturbed nature of the APE, there is little likelihood that construction would result in the discovery of buried cultural resources (J. West, Reclamation, pers. comm. 2001). Therefore, the construction of the Proposed Project would have a less-than-significant impact (no effect) on cultural resources.

*Impact 3.10-3: Operations effects associated with the use of the public river access on cultural resources in the project area.*

As explained above, the APE contains no previously recorded cultural resources nor historic properties. The Auburn Dam construction site is greatly altered and there is little likelihood that increased public use associated with the public river access sites would result in the discovery of buried cultural resources. Therefore, operation of the Proposed Project would have a less-than-significant impact on cultural resources.

#### ***Upstream Diversion Alternative***

*Impact 3.10-4: Effect of Upstream Diversion Alternative on cultural resources in the project area.*

As for the Proposed Project, the APE for the Upstream Diversion Alternative has been altered and disturbed by past construction and earthwork associated with Auburn Dam and seasonal pump station installation. The Upstream Diversion Alternative, therefore, would have a less-than-significant impact to cultural resources.

#### **Cumulative Facilities-Related Impacts**

The potential for facilities-related cultural resources impacts is considered to be of site-specific nature. The Proposed Project would not be expected to disturb any known cultural resources, and proper protection measures would be in place in the event an unknown resource becomes discovered during construction. Because of the site-specific conditions, the Proposed Project would not result in a considerable contribution to cumulative impacts upon cultural resources.

#### **Diversion-Related Impacts**

##### ***No Action/No Project Alternative Compared to the Existing Condition***

The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in changes in river flows or reservoir elevations for water bodies in the study area that would contribute to a significant effect upon cultural resources.

***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the Existing Condition***

The Proposed Project and the Upstream Diversion Alternative would result in the same timing and quantity of increased diversions from the American River. Changes in CVP and SWP operations associated with the Action Alternatives also generally would be the same. Therefore, the diversion-related analysis presented below represents the potential impacts that could occur with the Action Alternatives.

***Impact 3.10-5: Effect of changes in flows of the upper American River.***

Flows of the upper American River from Ralston Afterbay releases to the project site would be similar to the existing condition for much of the year. Flows under the Action Alternatives would be slightly lower in spring months (i.e., April and May) than under existing conditions, but would not drop below minimum flow levels. During summer low flow months, the Action Alternatives' flows would remain above the existing condition minimum flows.

Below the diversion, the Proposed Project would result in lower monthly mean flows relative to the existing condition. However, minimum flows would not fall below those of existing conditions. Additionally, as for upstream of the diversion, under low-flow conditions, river flows would remain above the existing condition minimum flow levels.

These changes in flow would not result in increased exposure of buried cultural resources. Therefore, potential impacts to cultural resources along the upper American River from changes in river flows would be less than significant.

***Impact 3.10-6: Effect of changes in water surface elevation at Folsom Reservoir.***

The modeling results indicate that the Action Alternatives would not result in a higher maximum water surface elevation at Folsom Reservoir during the 70-year simulation, compared to the existing condition. With regard to maximum drawdown, the comparison of the minimum end-of-month water surface elevations indicates that the minimum elevation would be lower under the Action Alternatives than under the existing condition in December, January and February. However, these lower elevations would be during winter months when the reservoir is at a relatively high elevation. In the months with the lowest minimum elevation (i.e., July through November), the minimum elevations would be increased. Thus, impacts on cultural resources at Folsom Reservoir from changes in maximum and minimum water levels would be less than significant.

***Impact 3.10-7: Effect of changes in flows of the lower American River.***

For the lower American River, the maximum and minimum monthly mean flows over the 70-year simulation were compared between the existing condition and the Action Alternatives. In order to estimate the magnitude and frequency of bank exposure and bank inundation along the lower American River, two locations were assessed: Nimbus Dam and the river mouth (confluence with the Sacramento River).

A stage/discharge relationship has not been developed for the entire reach of the lower American River. For this reason, it is difficult to quantify precisely the potential for exposure or inundation of cultural resources along the banks of the lower American River. Of course, higher water surface elevation occurs under higher flows and lower water elevations occur under lower flows. A comparison of flows under the existing condition and the Action Alternatives provides an estimate of the relative changes in river stage that could result.

Because no significant sites are expected to have survived within the riverbed itself near Nimbus Dam, lower flows would not expose previously submerged (and intact) cultural resources. It is possible that historic-era (post-1869) shipwrecks lie beneath the silty river bottom near the mouth, and that very low river flows could expose these resources. However, the magnitude of the changes predicted under the Action Alternatives is so small that this is highly unlikely. Also, known resources along the riverbank (two historic levees, a portion of the Natomas East Main Drainage Canal and prehistoric mound CA-SAC-26) lie outside the present river channel, and decreases in river flows would have no impact on these resources. Therefore, lower flows are not a concern with regard to cultural resources.

The Action Alternatives would result in maximum monthly mean river flows downstream of Nimbus Dam and at the mouth that would be virtually identical to those under the existing condition. Therefore, the impacts to cultural resources along the American River from changes in river flows would be less than significant.

*Impact 3.10-8: Effect of changes in water surface elevation at Shasta Reservoir.*

The modeling results indicate that the Action Alternatives would not result in a higher maximum elevation over the 70-year simulation, compared to the existing condition. With regard to maximum drawdown, the comparison of the minimum end-of-month elevation indicates that water surface elevation would be slightly lower (by less than four feet) during the winter and spring when the reservoir is typically at a higher elevation and slightly higher in the summer when the reservoir is typically at a lower elevation. Thus, impacts on cultural resources from changes in minimum and maximum water levels at Shasta Reservoir would be less than significant.

*Impact 3.10-9: Effect of water surface elevation at Trinity Reservoir.*

The modeling results indicate that the Action Alternatives would not result in any significant difference in Trinity Reservoir water surface elevation compared to the existing condition. Therefore, no impacts to cultural resources would be expected to occur within Trinity Reservoir.

*Impact 3.10-10: Effect of changes in flows of the upper and lower Sacramento River/Delta.*

The Action Alternatives would result in maximum and minimum monthly mean flows on the Sacramento River from Keswick Reservoir and at Freeport that are virtually identical to those under the existing condition. These flow results indicate that no new areas of the riverbank would be inundated or exposed. Therefore, the impacts to cultural resources along the upper and lower Sacramento River from changes in river flows would be less than significant.

*Impact 3.10-11: Impacts to Oroville Reservoir or Feather River cultural resources.*

The Action Alternatives would not result in substantial changes in minimum or maximum storage or elevation at Oroville Reservoir, or in minimum or maximum flow in the Feather River, relative to the existing condition. Any small changes that might occur would be considered to represent less-than-significant impacts upon cultural resources.

***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the No Action/No Project Alternative in the Future (2025)****Impact 3.10-12: Effect of changes in flows of the upper American River.*

Flows of the upper American River from Ralston Afterbay releases to the project site would be similar to the No Action/No Project Alternative for much of the year. Flows under the Action Alternatives would be slightly lower in spring months (April and May) than under existing conditions, but would not drop below minimum flow levels. During summer low flow months, the Action Alternatives would remain above the No Action/No Project Alternative minimum flow level due to the release of replacement water.

Below the diversion, the Action Alternatives would result in lower monthly mean flows relative to the No Action/No Project Alternative. However, minimum flows would not fall below those of the No Action/No Project Alternative. Additionally, as for upstream of the diversion, under low-flow conditions, river flows would be higher than the existing condition minimum flows.

These changes in flow would not result in increased exposure of buried cultural resources. Therefore, potential impacts to cultural resources along the upper American River from changes in river flows would be less than significant.

*Impact 3.10-13: Effect of changes in water surface elevation at Folsom Reservoir.*

The modeling results indicate that the Action Alternatives would not result in a higher maximum elevation during the 70-year simulation, compared to the No Action/No Project Alternative. With regard to maximum drawdown, the comparison of the minimum end-of-month water surface elevation indicates that in December, January and February, the minimum elevation would be lower under the Action Alternatives than under the No Action/No Project Alternative. However, the decrease in elevation would be during winter months when the reservoir is at a relatively high elevation. In the months with the lowest minimum elevation (July through November), the minimum elevation would be increased. Thus, impacts on cultural resources from changes in maximum and minimum water levels at Folsom Reservoir would be less than significant.

*Impact 3.10-14: Effect of changes in flows of the lower American River.*

Changes in minimum monthly mean flows would not be expected to affect cultural resources (see Impact 3.10-7). The maximum monthly mean river flows downstream of Nimbus Dam, and at the mouth of the lower American River, under the Action Alternatives, compared to the No

Action/No Project Alternative, would result in a less than 3 percent increase in flow in August, September and December, when flows are not typically at their peak. Therefore, the impacts to cultural resources along the river from changes in river flow would be less than significant.

*Impact 3.10-15: Effect of changes in water surface elevation at Shasta Reservoir.*

The modeling results indicate that the Action Alternatives would not result in a higher maximum elevation over the 70-year period of record compared with the No Action/No Project Alternative. With regard to maximum drawdown, the comparison of the minimum end-of-month elevation indicates that water surface elevation would be lower for 10 of the 12 months ranging from one to five feet. Because the differences are relatively small, impacts on cultural resources from changes in extreme water levels would be less than significant.

*Impact 3.10-16: Effect of changes in water surface elevation at Trinity Reservoir.*

The modeling results indicate that the Action Alternatives would not result in a higher maximum elevation over the 70-year period of record, compared with the No Action/No Project Alternative. With regard to drawdown, the comparison of the minimum end-of-month elevations indicates that water surface elevations would be lower in December through June, when the reservoir is typically at a higher elevation. In the months with the lowest minimum elevation (July through November), the minimum elevation would be increased. Therefore, no impacts to cultural resources within Trinity Reservoir would be expected to occur.

*Impact 3.10-17: Effect of changes in flows of the upper and lower Sacramento River.*

The Action Alternatives would result in maximum monthly mean river flows from Keswick Reservoir and at Freeport that are virtually identical to those under the No Action/No Project Alternative. Overall, impacts to cultural resources along the upper and lower Sacramento River would be expected to be less than significant.

*Impact 3.10-18: Impacts to Oroville Reservoir or Feather River cultural resources.*

The Action Alternatives would not result in substantial changes in minimum or maximum storage or elevation at Oroville Reservoir, or in minimum or maximum flow in the Feather River, relative to the No Action/No Project Alternative. Any small changes that might occur would be considered to represent less-than-significant impacts upon cultural resources.

### ***Cumulative Impacts***

*Impact 3.10-19: Effect of changes in flows of the upper American River.*

Cumulative condition flows of the upper American River from Ralston Afterbay releases to the project site would be similar to the existing condition for October through March. Mean monthly flows under the cumulative condition would be slightly lower in spring months (April and May) than under existing conditions, but would not be expected to drop below existing

minimum flow levels. During summer low flow months, the cumulative condition would result in flows above the existing condition minimum low flows.

Below the diversion, the cumulative condition would result in lower monthly mean flows relative to the existing condition. However, cumulative condition minimum flows would not be expected to fall below those of the existing condition. Additionally, as for upstream of the diversion, under low-flow conditions, flows would remain higher than the existing condition minimum flows.

These changes in flow would not result in increased exposure of buried cultural resources. Therefore, potential cumulative impacts to cultural resources along the upper American River from changes in river flows would be less than significant.

*Impact 3.10-20: Effect of changes in water surface elevation at Folsom Reservoir.*

The modeling results indicate that the cumulative condition would not result in a higher maximum elevation during the 70-year period simulation compared to the existing condition. With regard to maximum drawdown, the comparison of the minimum end-of-month water surface elevation indicates that in two of the summer/fall months where elevation is typically low (July through November), the minimum elevation would be lower under the cumulative condition than under the existing condition. The reductions in these months, September and November, would be only two feet and three feet, respectively. Therefore, impacts on cultural resources from cumulative changes in maximum and minimum water levels would be less than significant.

*Impact 3.10-21: Effect of changes in flows of the lower American River.*

The cumulative condition would result in maximum monthly mean river flows downstream of Nimbus Dam and at the mouth of the lower American River that are essentially identical to or slightly less than the existing condition. Therefore, the impacts to cultural resources along the lower American River from changes in river flows would be less than significant.

*Impact 3.10-22: Effect of changes in water surface elevation at Shasta Reservoir.*

The modeling results indicate that the cumulative condition would not result in a higher maximum elevation over the 70-year simulation compared to the existing condition. With regard to maximum drawdown, the comparison of the minimum end-of-month elevations indicates that for each month water surface elevation would be lower, ranging from eight to 45 feet. This is a potentially significant impact to cultural resources at Shasta Reservoir.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

The project's incremental contribution to the minimum end-of-month water surface elevation during the 70-year simulation would be reductions ranging from one to six feet msl in each month except June and November. In particular, the decreases of six feet in September and six feet in October reduce the reservoir elevation to 837 and 834 feet in September and October,

respectively. (The end-of-month minimum elevation would be 840 feet without the project [future conditions with PCWA diversions at 8,500 AF].) These reductions represent a potentially significant impact and represent a considerable contribution to the cumulative condition. The cumulative effects of minimum elevations during greater than the normal range of reservoir drawdown at Lake Shasta could have an adverse effect on historically significant prehistoric and historic archaeological sites above the existing effects. Sites would be subject to adverse effects of erosion, cycles of wetting and drying, recreation, and vandalism.

The reductions of end-of-month minimum elevations described above occur, in the 70-year simulation in 1934 at the end of a severe six-year drought. These reductions reflect the cumulative impact of this multi-year drought. In addition, the modeling simulated operational considerations such that reservoir drawdown effects were shifted from Folsom Reservoir to Shasta Reservoir so that minimum releases could be maintained from Folsom Reservoir. A portion of this reduction is an indirect response to changed conditions (e.g., AFRP modifications) resulting from the Proposed Project.

To reduce the potential for significant adverse effects to cultural resources at Shasta Reservoir, due to the increased potential for reservoir elevation to fall below normal minimum end-of-month elevations, Reclamation would enter into a Programmatic Agreement with the State Historic Preservation Officer, Advisory Council on Historic Preservation and any other interested parties or tribes. The Programmatic Agreement would be developed in compliance with Section 106 of the National Historic Preservation Act and would specify when and how measures would be used to assess the effects of reservoir drawdown upon cultural resources. The agreement would identify measures to reduce impacts upon these resources to levels considered less than significant.

*Impact 3.10-23: Effect of water surface elevation at Trinity Reservoir.*

The modeling results indicate that the cumulative condition would not result in any difference in Trinity Reservoir maximum water surface elevation compared to the existing condition. Minimum end-of-month elevations show decreases in April, May and June when the elevation is generally higher. Therefore, no impacts to cultural resources within Trinity Reservoir would be expected to occur.

*Impact 3.10-24: Effect of changes in flows of the upper Sacramento River.*

The cumulative condition would result in maximum monthly mean river releases on the Sacramento River from Keswick Reservoir that are higher than those under the existing condition in June and July when maximum flows are considerably less than peak winter flows. The cumulative condition would result in minimum monthly mean river flows on the Sacramento River below Keswick Reservoir that are lower than those under the existing condition in April and May (when flows are generally high), and in September, but by less than two percent. Therefore, impacts to cultural resources along the upper Sacramento River from differences in river flows would be less than significant.

*Impact 3.10-25: Effect of changes in flows of the lower Sacramento River/Delta.*

The cumulative condition would result in maximum monthly mean river flows in the lower Sacramento River at Freeport that are lower than or virtually identical to those under the existing condition. The cumulative condition would result in minimum monthly mean river flows in the lower Sacramento River at Freeport that are lower than those under the existing condition in June through December and in March. In particular, October and November would see a 70-year minimum flow that is 10 to 13 percent less under the cumulative condition. However, since no significant sites are expected to have survived intact within the riverbed itself, impacts to cultural resources on this stretch of the Sacramento River are expected to be less than significant.

*Impact 3.10-26: Effects of water surface elevation at Oroville Reservoir*

Compared to the existing condition, the cumulative condition would result in substantially lower long-term average end-of-month storage over the 70-year period of record. Long-term end of month elevation reductions for Oroville Reservoir would range from six feet to 18 feet. During individual years, reductions of up to 76 feet in end-of-month elevation would occur. Given the relatively large reduction in end-of-month water surface elevation, the potentially significant impacts to the cultural resources of the Oroville Reservoir would occur under the cumulative condition.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' contribution to the cumulative condition would not be considerable.

*Impact 3.10-27: Effects of changes in flow on the Feather River*

The largest long-term average flow reduction under the cumulative condition relative to the existing conditions would be 5.7 percent during the month of March. Conversely, long-term average flow increases under the cumulative condition relative to the existing condition would be up to 36.4 percent (i.e., August). These relatively sharp flow fluctuations may represent a potentially significant impact to the cultural resources of the Feather River.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' contribution to the cumulative condition would not be considerable.

### 3.10.2.5 Environmental Protection and Mitigation Measures

Construction of the pump station facilities, under all alternatives, would occur in areas already highly disturbed by past construction activities associated with Auburn Dam, therefore, it is considered highly unlikely that any buried resources remain within the construction area. However, the following measures have been incorporated into the Mitigation Plan (Appendix D to the Final EIS/EIR) and would be included as part of the construction specifications for the selected alternative to protect any cultural resources.

#### *Stop Construction Activities if Cultural Resources or Human Remains are Uncovered*

<b>Commitment:</b>	Protect any undiscovered prehistoric (e.g., arrowheads, mortar, human bones) or historic artifacts (e.g., glass, ceramics, metal, nails) according to CEQA Guidelines and Reclamation's Directives and Standards, LND 07-01. Notify authorities and follow procedures according to Reclamation's Directives and Standards, LND 07-01.
<b>Responsible Parties:</b>	Reclamation/Construction Contractor
<b>Location:</b>	Entire Project construction area
<b>Timing:</b>	During all phases of construction (2002 through 2004)
<b>Monitoring:</b>	No specific monitoring requirement
<b>Reporting Requirements:</b>	The discoverer of human remains must contact Reclamation's Regional Director/designee (contract officer's representative) immediately by telephone or in person, followed by written confirmation of the discovery within 48 hours.

#### **Description of Activities:**

If previously unidentified cultural resources are encountered during Project construction, Reclamation will require the Construction Contractor to stop construction work within 20 meters of the material(s) and the contract officer's representative will be sought immediately and will contact Reclamation's Regional Archaeologist/designee. If human remains are uncovered the Construction Contractor will notify Reclamation immediately.

#### **Success Criteria:**

Through communication with construction personnel, provide procedure to respond to uncovering of any discovered prehistoric or historic artifacts.

#### *Develop and Implement Programmatic Agreement with State Historic Preservation Officer Regarding Potential Indirect Impacts at Shasta Reservoir*

<b>Commitment:</b>	Reclamation will develop a Programmatic Agreement with SHPO that defines what action(s) will be taken, if needed.
<b>Responsible Party:</b>	Reclamation
<b>Location:</b>	Shasta Reservoir
<b>Timing:</b>	Project operation

The monitoring and reporting requirements would be determined in the Programmatic Agreement between Reclamation and SHPO. Additionally the specific description of the activities would be described in the Programmatic Agreement.

**Success Criteria:**

Protection of cultural resources at Shasta Reservoir, as needed based on water year conditions.

## 3.11 POWER SUPPLY

### 3.11.1 AFFECTED ENVIRONMENT

Hydropower generation at CVP facilities is an important resource for contributing to the reliability of the electrical power system in California. Impacts to CVP hydropower operations can result from increased water diversions that result in both lower reservoir levels and less water flow through turbines. In addition to potential impacts to electric system reliability, loss of hydropower capacity and generation also can result in indirect environmental impacts by necessitating increased power generation using means that are less environmentally sensitive.

#### Central Valley Project Hydropower System

The CVP hydropower system consists of nine power plants and two pump-generating plants (Table 3.11-1). This system is fully integrated into the Northern California Power System and provides a significant portion of the hydropower available for use in northern and central California. The installed power capacity of the system is 2,085,350 kilowatts (kW). By comparison, the combined capacity of the 368 operational hydropower plants in California is 12,866,000 kW and PG&E is the area's major power supplier with a generating capacity from all sources of over 20,000,000 kW.

Table 3.11-1 Power Resources of the Central Valley Project	
Unit	Maximum Generating Capacity (kW)
<b>Sacramento River Service Area</b>	
Carr <sup>a</sup>	184,000
Lewiston	350
Keswick	105,000
Shasta <sup>b</sup>	625,000
Spring Creek	200,000
Trinity	140,000
<b>Subtotal</b>	<b>1,254,350</b>
<b>American River Service Area</b>	
Folsom	215,000
Nimbus	17,000
<b>Subtotal</b>	<b>232,000</b>
<b>Delta Export and San Joaquin Valley</b>	
New Melones	383,000
O'Neill <sup>c</sup>	14,000
San Luis <sup>c,d</sup>	202,000
<b>Subtotal</b>	<b>599,000</b>
<b>TOTAL</b>	<b>2,085,350</b>
<sup>a</sup> Limited by tunnel restrictions. <sup>b</sup> With rewinds as of summer 2000. <sup>c</sup> Pump-generating plant. <sup>d</sup> Operated by DWR for Reclamation; eight 53,000 kW units for a total installed capacity of 424,000 kW, of which Reclamation's share is 202,000 kW. Source: WAPA 2000	

Once a strong influence on CVP operations, power operations are now secondary to other considerations. In part, this subordination is caused by the elevation of environmental needs to a higher standing, but changes in contractual relationships also have reduced the priority of power.

Power produced by the CVP hydropower system is used first for meeting CVP project water pumping loads, which is deemed “project use power,” at CVP pumping facilities (**Table 3.11-2**). Power surplus to project use is “commercial power” and is marketed by the Western Area Power Administration (WAPA) under long-term firm contracts to municipal and government entities (preference customers) at cost-based rates pursuant to Reclamation Law. In an average year, 4,600 gigawatthours (GWh) of energy and 1,700,000 kW of capacity are marketed to preference customers at rates that recover full cost of production and repayment obligations of CVP project investment with interest. Energy surplus to CVP project use and preference customer power needs is “banked” under WAPA-PG&E Contract 2948A, to be repaid when needed by WAPA and its customers. The contractual agreements between WAPA and its customers terminate in 2004, and it is unlikely that the contract will be renewed. WAPA is currently in the process of determining how it will market the CVP hydropower resources surplus to CVP project use power needs once the contract has expired.

<b>Table 3.11-2 Major Pumping Plants in the CVP</b>		
<b>Unit</b>	<b>Capacity (cfs)</b>	<b>Average Annual Energy Use (kilowatthours (kWh))</b>
<b>American River Service Area</b>		
Folsom Pumping Plant	350	1,041,000
<b>Delta Export and San Joaquin Valley</b>		
Contra Costa Canal	410	18,908,000
Dos Amigos <sup>a</sup>	13,200	180,146,000 <sup>b</sup>
O'Neill	4,200	87,185,000
San Luis <sup>a</sup>	11,000	306,225,000 <sup>b</sup>
Tracy	4,600	620,712,000
<sup>a</sup> Joint state-federal facility. <sup>b</sup> Federal energy use. Source: Corps 1992		

### ***Folsom Dam and Reservoir***

The Folsom Power Plant has three generating units, with a total release capacity of approximately 8,600 cfs. By design, the facility is operated as a peaking facility. Peaking plants schedule the daily water release volume during the peak electrical demand hours to maximize generation at the time of greatest need. At other hours during the day there may be little or no release (and no generation) from the plant.

To avoid fluctuations in flow in the lower American River, Nimbus Dam and Reservoir is operated as a regulating facility. While the water surface elevation in Nimbus Reservoir fluctuates, releases to the lower American River are kept constant. The Nimbus Power Plant consists of two generating units with a release capacity of approximately 5,100 cfs. Electric generation from this facility is continuous throughout the day.

Pumping Plants on Folsom Reservoir

There are two pumping plants located on Folsom reservoir: the Folsom Pumping Plant, located at Folsom Dam, and the El Dorado Irrigation District (EID) Pumping Plant. The Folsom Pumping Plant serves the City of Folsom, Folsom Prison, the City of Roseville, and the San Juan Water District. These entities take delivery of their water at different elevations. At times when the reservoir is high, gravity flow is possible and pumping is not required. The elevation at which pumping is required depends on the amount of water being pumped. Higher flow rates, typical of summer months, require greater pumping head, therefore the lower limit of gravity flow is higher in the summer months. **Table 3.11-3** summarizes information about how the pumping plants at Folsom Reservoir respond at various reservoir elevations.

Table 3.11-3 Folsom Reservoir Water Surface Elevation Pumping Conditions		
Surface Elevations (feet msl)	Storage <sup>a</sup> (AF)	Pumping Condition
433	640,800	Lower limit of gravity flow to City of Roseville and San Juan Water District during irrigation season (April - October).
425	569,900	Lower limit of gravity flow to City of Roseville and SJWD during non-irrigation season.
414	480,200	Lower limit of gravity flow to City of Folsom and Folsom Prison.
356	158,900	EID pumps begin to develop vortex problems.
340	111,900	Potential vortex at dam intake, depending on volume of pumping.
335	100,000	Folsom Pumping Plant limited to 70 cfs.
325	79,200	Lower limit of EID pumps and Folsom Pumping Plant; pumps on barges required to pump water to existing intakes.
315	62,100	Elevation of Folsom Dam water intake; tap penstocks.
307	50,400	Elevation of power penstocks; portable pumps placed on a barge to supply pipeline intake.
<sup>a</sup> Reclamation Folsom Reservoir 1993 Area Capacity Tables. Source: Corps 1992		

State Water Project FacilitiesOroville Reservoir

DWR stores winter and spring runoff in Oroville Reservoir for release to the Feather River, as necessary for project purposes (i.e., water supply, power generation, flood protection, fish and wildlife enhancement, and recreation). Typically, power is generated when water releases are being made for these other purposes, when deliveries are being made to local irrigation districts through the Afterbay, or when pump-back operations are in effect. On a weekly basis, releases are scheduled to accommodate water supply requirements, water quality and quantity requirements in the Delta, instream flow requirements in the Feather River, power requirements, and minimum flood control space. The weekly plan is updated as needed to respond to changing conditions. The Thermalito Dam Pool and the Thermalito Forebay and Afterbay are too small for seasonal storage so they are used only in weekly and daily operations planning. Hourly releases through the Edward Hyatt and Thermalito Pumping Generating plants are scheduled on an hourly basis to maximize the amount of energy produced when power values are highest. Because the downstream water supply is not dependent on hourly releases and pumping of SWP

water can be scheduled at off-peak times, hourly operations are primarily dictated by electrical energy prices and ancillary service requirements such as spinning reserve, the supplemental energy market, and voltage regulation. Storage in Thermalito Forebay and Afterbay is used to maximize the value of project energy and maintain uniform flows in the Feather River downstream of the Oroville facilities. The Thermalito Afterbay also provides storage for pump-back operations. The pump-back operations are designed to use water in excess of what is required for downstream flow requirements for pumping back into the Thermalito Forebay and then into Oroville Reservoir in off-peak energy hours for re-release during peak hours when power rates again increase. Because the power plants are operated to maximize weekday generation when power prices are highest, there is usually higher storage in the Afterbay by the end of the week. During the weekend, water from the Afterbay is lowered to prepare for a similar operation the following week.

### 3.11.2 ENVIRONMENTAL CONSEQUENCES/IMPACT ANALYSIS

#### 3.11.2.1 Methodology

The monthly gross CVP electrical generation and dependable capacity for the various conditions simulated in this study were estimated using PROSIM. Differences in energy and capacity between the conditions were then evaluated to assess impacts. Also evaluated were differences in the amount of energy needed to pump water at the Folsom Pumping Plant and the EID Pumping Plant.

##### Hydropower Analysis Framework

Increased water diversions leave less water in the rivers, resulting in less water flow for hydropower generation. Increased diversions also reduce the volume of water for filling reservoirs, resulting in reduced hydraulic head on hydropower turbines and, consequently, less power generation. Other changes in the pattern of CVP reservoir operation can affect CVP hydropower generation and dependable capacity.

Reductions in generation and capacity would not represent direct environmental effects, but may have economic consequences for CVP power users in the form of increased capacity/energy purchases to support loads. It is possible that thermal generation resources, which emit air pollutants, would supply some portion of the replacement power. Estimating the impact associated with the replacement energy would be speculative and is beyond the ability to predict, given the interconnection of electric utility generation in the western United States.

##### Pumping Power Analysis Framework

Pumping energy requirements also are affected by total reservoir storage, since less storage means that water must be lifted a greater height from the reservoir surface. Reductions in Folsom Reservoir elevations caused by the Proposed Project or alternatives would increase energy requirements for pumping water at the Folsom and EID pumping plants. These impacts, like those for hydropower, would not be expected to cause direct environmental effects, but

would have economic consequences and may cause indirect effects by requiring additional energy generation.

Energy usage at the pumping plants was estimated based on the amount of acre-feet pumped, the feet of lift required from the reservoir surface to the delivery elevation and the average plant efficiency. New, variable -speed pumps were made operational at the Folsom Pumping Plant in fall of 2000. Because of this, the absolute magnitude of future impacts at the Folsom Pumping Plant may be less than estimated herein, however the percentage impact shown should not be affected by the change in plant facilities.

Note that the Folsom and EID pumping plants serve local water purveyors and increased water deliveries by these purveyors will increase the energy requirement at the respective pumping plant irrespective of any impact caused by the Proposed Project being analyzed.

### **State Water Project Hydropower and Pumping Power (Oroville Facilities)**

Impacts to hydropower generation of Oroville Reservoir would be significant if generation or dependable capacity were substantially reduced by the cumulative condition relative to the existing condition. Impacts to pumping power could result from changes in the elevation of water stored at Oroville Reservoir. Such impacts would be considered significant if pumping energy requirements for purveyors at Oroville Reservoir were to increase substantially.

### **3.11.2.2 Impact Indicators and Significance Criteria**

CEQA Guidelines do not provide guidance related to changes in hydropower capacity or pumping power costs. Significance criteria have been tailored specifically to address these issues.

### **Hydropower**

Hydropower impacts may result from reduction in generation or dependable capacity. Reduction in CVP generation could be a cost impact either because WAPA would be precluded from selling excess energy or might be required to purchase additional energy for its customers. Similarly, if dependable capacity was reduced as a result of the Proposed Project or alternatives, then a cost impact could be incurred. This analysis assumed that impacts would be significant if hydropower generation or dependable capacity were substantially reduced by the Proposed Project or alternatives.

Gross hydropower generation, that is, the amount before project use, is evaluated in this report. The values shown are reduced for transmission loss to represent the energy generation available at the load center near Tracy. The values shown herein include generation from New Melones Dam.

This EIS/EIR includes evaluation of dependable hydropower capacity. This differs from many earlier environmental documents that only looked at the instantaneous hydropower capacity, that is, the hydropower capacity corresponding to the current reservoir elevation. In response to

concern by WAPA about the availability of electrical power in California, this analysis evaluates the amount of hydropower capacity available over a specified, minimum period of time. This capacity is referred to as dependable capacity and is defined as the monthly generation divided by the hours specified in Table 1 of Contract 2948 between the CVP and PG&E (but not more than the instantaneous capacity). Similar to generation, the dependable capacity presented in this report is gross before project use, includes capacity at New Melones Dam, and is adjusted for transmission to reflect capacity at the load center near Tracy.

### **Pumping Power**

Impacts to pumping power could result from changes in the elevation of water stored in Folsom Reservoir. Such impacts would be considered significant if pumping energy requirements for purveyors at Folsom Reservoir were to increase substantially.

### **3.11.2.3 Impact Analysis**

This section presents the analysis of potential diversion-related power supply impacts. A summary of the impact issues, level of significance, and environmental protection and mitigation measures is provided in the Executive Summary to the Final EIS/EIR, Table S-5.

### **Diversion-Related Impacts**

The diversion-related analysis refers to certain tables and graphs prepared to provide additional representation of the modeling results and comparison of simulated conditions. These tables and figures are included in Appendix H to the Draft EIS/EIR and are labeled by the appendix letter, resource section number, and ordered as it is referenced in the impact analysis (H-3.11-1, H-3.11-2, etc.).

### ***No Action/No Project Alternative Compared to the Existing Condition***

The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant effects on gross hydropower generation, gross hydropower dependable capacity or upon pumping energy requirements.

### ***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the Existing Condition***

The Proposed Project and the Upstream Diversion Alternative would result in the same timing and quantity of increased diversions from the American River. Changes in CVP or SWP operations associated with the Action Alternatives also would be the same. Therefore, the diversion-related analysis presented below represents the potential impacts that could occur with the "Action Alternatives."

*Impact 3.11-1: Effects on gross hydropower generation.*

Table H-3.11-1 summarizes the gross hydropower generation, in GWh, generated at CVP facilities under the existing and Action Alternatives conditions, as well as the difference between those two conditions. These values are gross before CVP project use, include generation at New Melones Dam, and are adjusted for transmission loss to be the amount available at Tracy. As shown in Table H-3.11-1, the impact on annual generation is estimated to average reduction by 8 GWh, or less than 0.2 percent. This would be considered a less-than-significant impact.

*Impact 3.11-2: Effects on gross hydropower dependable capacity.*

The difference in the amount of dependable capacity generated by CVP facilities under the existing condition and Action Alternatives is shown in Figures H-3.11-1, H-3.11-2, and H-3.11-3. Negative values indicate there would be less dependable capacity under the Action Alternatives (project condition) relative to the No Action/No Project Alternative. Note that over the long-term, the negative values, or impacts, are to an extent offset by positive values.

Table H-3.11-2 summarizes key data from these figures. Shown is the median difference and the 90 percent exceedance difference in dependable capacity between the two simulations. The 90 percent exceedance value indicates that 90 percent of the time the impact will be smaller or negative, i.e., a benefit. The median difference in dependable capacity between simulations is largest in September, at 2 MW. This is less than one percent of the 832 MW of total dependable capacity in September under the existing condition. The 90 percent exceedance in dependable capacity between the existing and Action Alternatives conditions is largest in February, at 14 MW. This is less than one percent of the 1720 MW of dependable capacity in February, under the existing condition. (The CVP dependable capacity data is included in Appendix I of the Draft EIS/EIR.)

Overall, the effect of the Action Alternatives on dependable capacity would be considered a less-than-significant impact.

*Impact 3.11-3: Effects on pumping energy requirements.*

The Folsom and EID pumping plants lift water from Folsom Reservoir to treatment plants for treatment and distribution to water users. The Action Alternatives would result in lower water elevations in Folsom Reservoir which creates need for greater amounts of energy to accomplish the required pumping. The increased energy requirement under the Action Alternatives compared to the existing condition is only 1.4 percent greater at the Folsom Pumping Plant and 0.1 percent greater at the EID Pumping Plant. These increased energy requirements are not considered substantial; therefore, it is considered a less-than-significant impact.

*Impact 3.11-4: Effects on Oroville Reservoir water elevation that could affect power.*

No substantial changes in reservoir elevation would be anticipated under the Action Alternatives relative to the existing condition. Any small changes in elevation would be considered to represent less-than-significant impacts.

***Proposed Project and Upstream Diversion Alternative (Action Alternatives) Compared to the No Action/No Project Alternative in the Future (2025)******Impact 3.11-5: Effects on gross hydropower generation.***

Impact of the Action Alternatives under the future condition on CVP gross generation was estimated to be 7 GWh. This represents less than 0.2 percent loss of generation compared to the No Action/No Project Alternative. This would be a less-than-significant impact.

***Impact 3.11-6: Effects on gross hydropower dependable capacity.***

The difference in amount of dependable capacity generated by CVP facilities under the No Action/No Project Alternative and Action Alternatives is summarized in Table H-3.11.3. Shown is the median difference and the 90 percent exceedance difference in dependable capacity between the No Action/No Project Alternative and Action Alternatives conditions. The median difference in dependable capacity would be 1 MW or less. The 90 percent exceedance in dependable capacity would be greatest in November, at 33 MW. This represents only two percent of the total dependable capacity in November compared to the No Action/No Project Alternative.

Overall, the effect of the Action Alternatives on dependable capacity compared to the No Action/No Project Alternative under future system conditions would be considered a less-than-significant impact.

***Impact 3.11-7: Effects on pumping energy requirements.***

The Action Alternatives would result in slightly lower future water elevations in Folsom Reservoir, creating a need for greater amounts of energy at the Folsom and EID pumping plants compared to the No Action/No Project Alternative. The increased energy requirement would be 0.7 percent greater at the Folsom Pumping Plant and less than 0.1 percent greater at the EID Pumping Plant. This would be considered a less-than-significant impact.

***Impact 3.11-8: Effects on Oroville Reservoir water elevation that could affect power.***

No substantial changes in reservoir elevation would be anticipated under the Action Alternatives relative to the No Action/No Project Alternative. Any small changes in elevation would be considered to represent less-than-significant impacts.

***Cumulative Impacts******Impact 3.11-9: Effects on gross hydropower generation.***

Table H-3.11-4 summarizes the gross hydropower generated at CVP facilities under the cumulative and existing conditions, as well as the difference between those two conditions. As shown in Table H-3.11-4, the impact on annual generation is estimated to an average reduction

of 356 GWh. This represents a seven percent loss of generation. This represents a significant economic cumulative impact.

The time-series of generation impacts due to the cumulative condition as compared to the existing condition is shown in Figure H-3.11-4. Figure H-3.11-5 provides an exceedance curve of generation impacts.

#### *Action Alternatives' Incremental Contribution to the Cumulative Condition*

The incremental analysis shows the Action Alternatives would result in a 9 GWh per year reduction in generation on average. That represents less than 0.2 percent of the generation and this would be considered a less-than-significant contribution to the cumulative condition.

#### *Impact 3.11-10: Effects on gross hydropower dependable capacity.*

Figures H-3.11-6 and H-3.11-7 show the difference in dependable capacity between the existing and cumulative conditions. Negative values indicate the extent to which dependable capacity under the cumulative condition would be less than under the existing conditions. Impacts would be largest in August through November.

Table H-3.11-5 shows the median and 90 percent exceedance of the difference in dependable capacity between the existing and cumulative conditions. This shows October to have the largest median impact, at 94 MW (Table H-3.11-6). This represents seven percent of the median total dependable capacity under existing conditions. The largest 90 percent exceedance impact is in August, at 371 MW. This represents 24 percent of the total dependable capacity in August under existing conditions. Overall, this is a significant cumulative impact.

#### *Action Alternatives' Incremental Contribution to the Cumulative Condition*

The incremental analysis shows, however, that the Action Alternatives would have a very small contribution to the cumulative condition. The month with the largest median impact would be September, at 2 MW. This represents less than one percent of the total. The largest difference at the 90 percent exceedance level would be 33 MW in November, representing two percent of the total dependable capacity. This would be considered a less-than-significant contribution to the cumulative condition.

#### *Impact 3.11-11: Effects on pumping energy requirements.*

The Action Alternatives result in lower water elevations in Folsom Reservoir which creates need for greater amounts of energy to accomplish the required pumping at Folsom and EID pumping plants. A more significant effect derives from the fact that far more water is delivered by the respective water purveyors through these pumps in the cumulative condition as compared to the existing condition. The energy requirement under the cumulative condition is more than doubled at the Folsom Pumping Plant and six-fold greater at the EID Pumping Plant. This is a significant cumulative economic impact which is borne by the water users who benefit from the pumping.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

The incremental contribution analysis shows that the Action Alternative-induced impacts on pumping energy requirements are small: a 1.8 percent increase in requirement at the Folsom Pumping Plant and a 0.1 percent increase in requirement at the EID Pumping Plant. This would be considered a less-than-significant contribution to the cumulative condition.

*Impact 3.11-12: Effects on Oroville Reservoir water elevation and power supply.*

The cumulative condition would result in a reduction in the long-term water elevation of Oroville Reservoir of up to 18 feet and a long-term average reduction in storage of up to 8.5 percent. Given the uncertainties associated with the effects that increased SWP demands, reflected in the cumulative condition, would have on Oroville Reservoir to facilities' hydropower dependable capacity and pumping energy requirements, this would be considered a potentially significant impact.

*Action Alternatives' Incremental Contribution to the Cumulative Condition*

No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' contribution to the cumulative condition would not be considerable.

**3.11.2.4 Environmental Protection and Mitigation Measures**

The Proposed Project and alternatives would not result in significant impacts upon CVP electric generation capacity, energy requirements for pumping from Folsom Reservoir, or electrical energy generation or capacity or energy requirements for pumping. Additionally, the Proposed Project or alternatives would not result in a significant contribution to the cumulative condition. Therefore, no environmental protection or mitigation measures are proposed.

## 3.12 LAND USE

The Proposed Project or alternatives would have localized direct effects within the project study area. These effects are limited to facilities-related activities in the project area, including construction, operations and maintenance. The description of the affected environment and the evaluation of impacts, therefore, address only facilities-related effects within the project area. A discussion of growth-inducement within the PCWA service area also is included.

### 3.12.1 AFFECTED ENVIRONMENT

#### 3.12.1.1 Project Area Setting

The project area represents the direct effect study area and includes the lands immediately adjacent to the Middle Fork American River from below Ralston Afterbay to its confluence with the North Fork American River and from the confluence to Oregon Bar.

##### *Middle Fork American River*

The Middle Fork American River forms the U.S. Forest Service (USFS) boundary between the El Dorado National Forest and the Tahoe National Forest. Land surrounding the Middle Fork are managed by the USFS as multiple use lands, which includes natural resource recreation, extraction, management, restoration, and conservation land use activities. The Tahoe National Forest provides land management direction under the policies and guidelines of the *Tahoe National Forest Land and Resource Management Plan* implemented in 1990. The El Dorado National Forest provides land management direction under the policies and guidelines of the *El Dorado National Forest Land and Resource Management Plan* implemented in 1988. Below Ralston Afterbay, in addition to USFS lands along the Middle Fork American River, land use and regulatory jurisdictions include Reclamation, BLM, CDPR, the City of Auburn, and some private landholders. CDPR manages whitewater outfitter guide activities on National Forest System land through agreement with USFS and Reclamation agreement.

##### *North Fork American River*

Below the confluence of the Middle Fork and North Fork, Reclamation has land use jurisdiction over the majority of land along the North Fork American River down to Folsom Reservoir, with some smaller fragmented parcels of land managed by BLM. CDPR manages recreational uses of Reclamation lands below the confluence of the Middle and North Fork American River with the Auburn SRA.

##### *Project Area*

Land uses of the project area primarily consist of open space and activities related to Reclamation's installation and removal of the seasonal pump station facilities. The former Auburn Dam construction roads are used for access to the water facilities. Water-based

recreation is not permitted in the project area; however, the Auburn-to-Cool and Western States trails traverse the site, which provide horseback riding, hiking, and biking uses.

### 3.12.2 ENVIRONMENTAL CONSEQUENCES/IMPACT ANALYSIS

#### 3.12.2.1 Methodology

The anticipated construction, operation, and maintenance impacts of project facilities on land uses in the project area were evaluated with regard to the type and intensity of existing and planned land uses at and near the project site, including consistency with relevant local and regional planning and land use policies.

#### 3.12.2.2 Applicable Laws, Ordinances, Regulations, and Standards

Broad management guidelines for the public use of Auburn Dam project lands were established under P.L. 89-161, the enabling legislation for the construction of Auburn Dam. Specific management direction for the Auburn SRA is provided in the General Plan for the Auburn Reservoir Project and Folsom SRA, completed in 1978 and updated in 1990.

#### 3.12.2.3 Impact Indicators and Significance Criteria

Impact indicators and significance criteria were determined from city, county, and agency land use general plans for the project area. The Environmental Checklist of the State CEQA Guidelines provides general guidance in the identification of circumstances that may result in a significant effect on the environment related to land use. **Table 3.12-1** Presents the impact indicators and significance criteria for impacts on land use.

Table 3.12-1 Land Use Impact Indicators and Significance Criteria	
Impact Indicators	Significance Criteria
<input type="checkbox"/> Land use designations	<input type="checkbox"/> Alteration of the existing or planned designated land uses of an area.
<input type="checkbox"/> Compatibility with surrounding land uses and regional character	<input type="checkbox"/> Change of the type or intensity of land uses resulting in incompatibility with existing surrounding land uses or incompatibility with the regional character.
<input type="checkbox"/> Number of affected businesses, homes, or people.	<input type="checkbox"/> Displacement of a large number of business, homes, or people that would be inconsistent with local plans for the area.
<input type="checkbox"/> Local and regional planning objectives; project planning objectives	<input type="checkbox"/> Conflict with adopted environmental plans and goals of local jurisdictions, as stated in their general, community, or other planning policy materials.

### 3.12.2.4 Impact Analysis

This section presents the analysis of potential facilities-related land use impacts. A summary of the impact issues, level of significance, and environmental protection and mitigation measures is provided in the Executive Summary to the Final EIS/EIR, Table S-5.

#### Facilities-Related Impacts

##### *No Action/No Project Alternative*

*Impact 3.12-1: Change in designation, type, or intensity of land uses at the project site.*

The No Action/No Project Alternative would not require any changes in designated land uses at the project site, and would not affect the type or intensity of activities. No businesses, homes or individuals would be displaced by continuation of the seasonal pump station practices. This alternative, therefore, would represent a less-than-significant change from existing conditions.

*Impact 3.12-2: Conflict with local or regional planning policies, goals, or objectives.*

Continued installation of the seasonal pump station would not permit restoration of the river channel or associated increased public use of the area. Additionally, the bypass tunnel would remain operational and would continue to pose a public safety hazard. This alternative results in potential inconsistencies with Reclamation and CDPR long-range planning goals for the Auburn SRA and would be in direct conflict with direction provided by the State Attorney General's office to close the bypass tunnel. Because there would be no feasible means of mitigating or eliminating these issues under the No Action/No Project Alternative, these issues represent significant unavoidable impacts.

##### *Proposed Project*

*Impact 3.12-3: Change in designation, type, or intensity of land uses at the project site.*

The type of land uses at the project site (water supply utility, recreation, open space) generally would remain the same as under the existing condition and the No Action/No Project Alternative. Land use designations would not change although the intensity and activity associated with these uses would change. Operation and maintenance of the pump station would result in activity year-round, rather than seasonally. Public access and recreational use of the restored river channel also would result in increased seasonal use of the area. These changes would be compatible and consistent with existing surrounding land uses (recreation activities and rural residential) as well as with the regional characteristics. No businesses, homes, or individuals would be displaced. The anticipated increased utility-related and public activities at the site therefore represent a less than significant land use impact.

*Impact 3.12-4: Conflict with local or regional planning policies, goals, or objectives.*

Development of the year-round pump station would not result in a conflict or inconsistency with Reclamation policies governing land use at the project site. Reclamation and PCWA would